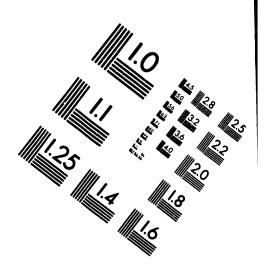
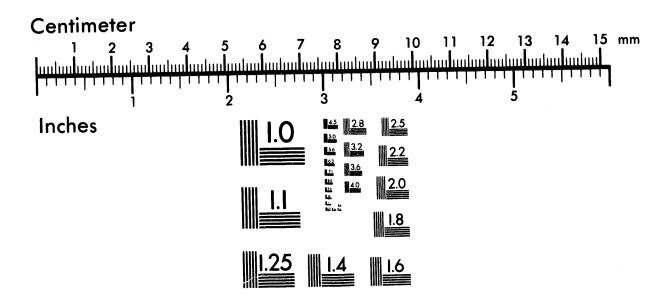


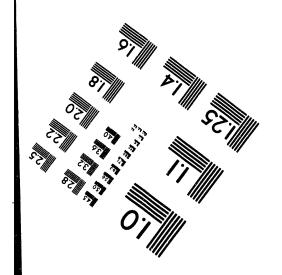


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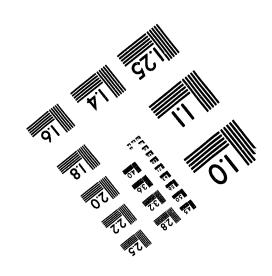






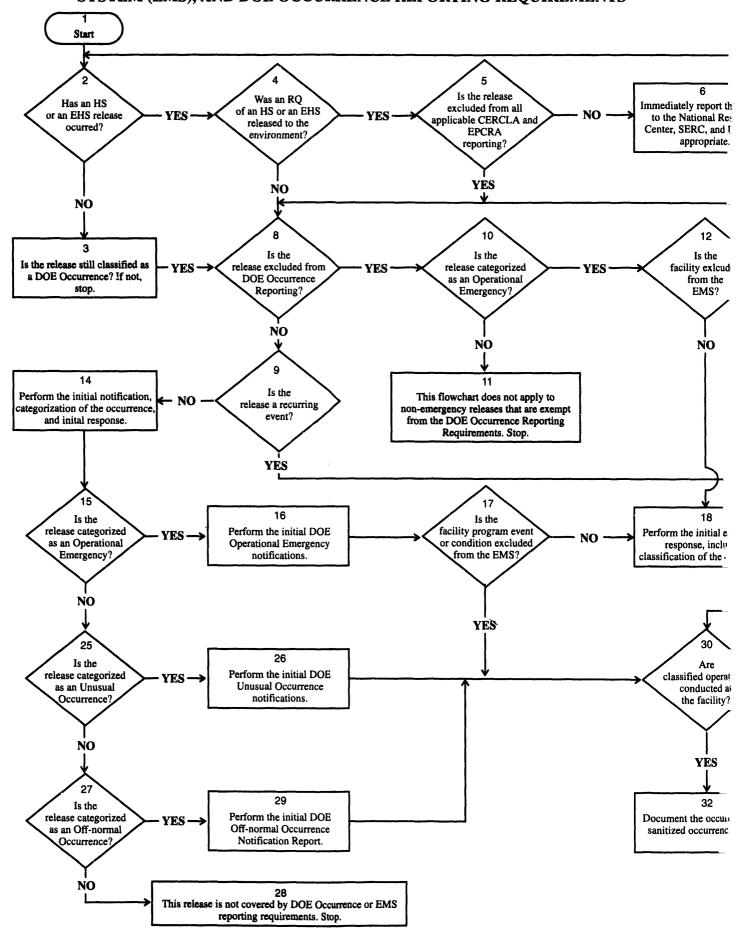
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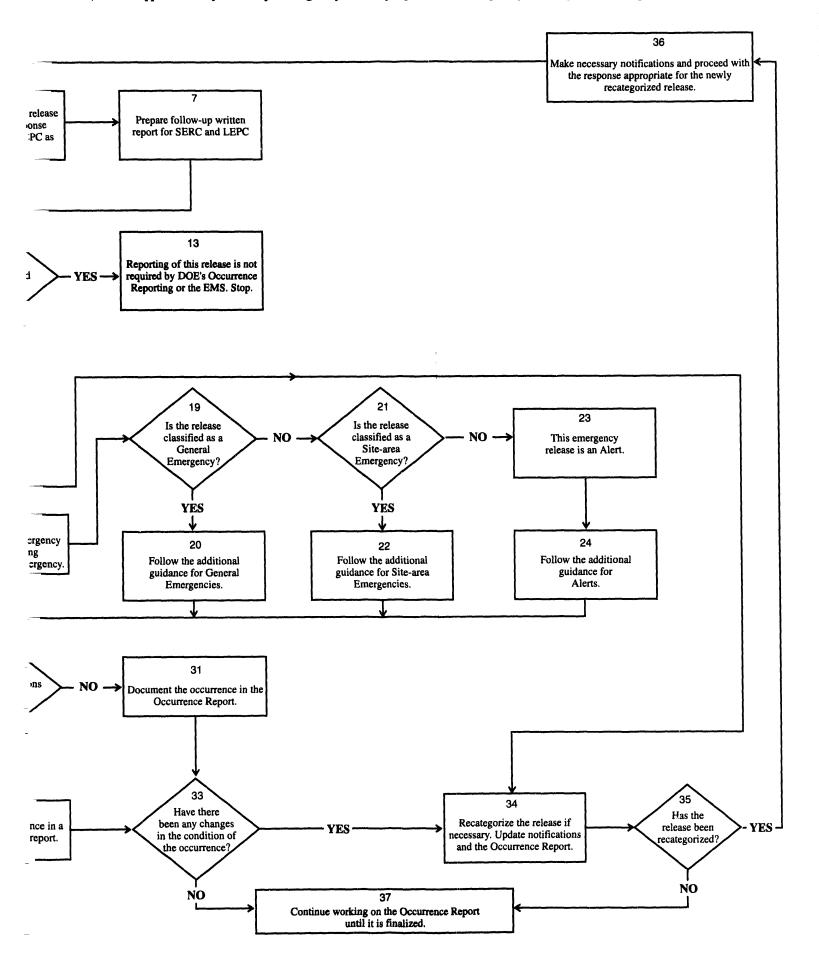
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### OVERVIEW OF RELEASE REPORTING UNDER CERCLA, THE EMERGENCY MANAGEMENT SYSTEM (EMS), AND DOE OCCURRENCE REPORTING REQUIREMENTS





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## memorandum

DATE:

May 24, 1994

REPLY TO ATTN OF:

Office of Environmental Guidance: Dailey: 6-7117

SUBJECT:

Environmental Guidance on Reporting Releases of Hazardous Substances at DOE

**Facilities** 

TO:

#### Distribution

The purpose of this memorandum is to provide Department of Energy Program Offices and Field Organizations with a copy of an environmental guidance document entitled: "Hazardous Substance Release Reporting Under CERCLA, EPCRA § 304, and DOE Emergency Management System/Occurrence Reporting System". Developed by the Office of Environmental Guidance, RCRA/CERCLA Division (EH- 231), this guidance document uses a graphic approach consisting of a flowchart and step-by-step instructions on how to comply with the requirements of the subject Federal statutes/regulations and DOE management systems upon the release of hazardous substances at DOE facilities.

In preparing this guidance, EH-231 distributed draft versions to the Program Offices cognizant for DOE's Emergency Management System and Occurrence Reporting System, as well as selected Field Organizations with responsibility for reporting releases of hazardous substances. All comments have been addressed in preparing the final document, and we believe the input provided by the reviewers has improved the utility, application and the quality of this guidance. EH-231 wishes to express its appreciation for the comprehensive, professional job that these organizations provided in reviewing this document and in assisting us in finalizing the guidance.

Questions regarding hazardous substance reporting requirements in general, or this guidance document in particular, may be directed to Rich Dailey of my staff at (202) 586-7117.

Thomas T Traceski

Director, RCRA/CERCLA Division Office of Environmental Guidance



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National Low-Level Waste Management Program, EG&G Idaho Hazardous Waste Remedial Action Program, (HAZWRAP) Remedial Action Program Information Center Center for Environmental Management Information

# HAZARDOUS SUBSTANCE RELEASE REPORTING under CERCLA, EPCRA §304 & DOE EMERGENCY MANAGEMENT SYSTEM (EMS) and DOE OCCURRENCE REPORTING REQUIREMENTS



June 1994

Prepared by

U.S. DEPARTMENT OF ENERGY
OFFICE OF ENVIRONMENTAL GUIDANCE
RCRA/CERCLA DIVISION
(EH-231)
Washington, D.C.

Technical support by

Energetics, Inc.

#### Table of Contents

Flowchart	Fold-Out
Introduction	2
Supplemental Information for the Release Reporting Flowchart	5
Table 1: Categorization of Occurrences - Selected Examples	30
Table 2: Classification of Operational Emergencies	34
Appendix I: List of CERCLA Hazardous Substances and Reportable  Quantities (40 CFR 302.4 Table 302.4)	38
Appendix II: List of Radionuclides and Reportable  Quantities (40 CFR 302.4 Appendix B)	78
Appendix III: List of EPCRA Extremely Hazardous Substances and their Threshold Planning Quantities (40 CFR 355 Appendix A)	92
References	102
List of Acronyms	104

#### Introduction

#### Background

Releases of various substances from DOE facilities may be subject to reporting requirements under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Emergency Planning and Community Right-to-Know Act (EPCRA), as well as DOE's internal "Occurrence Reporting and Processing of Operations Information" and the "Emergency Management System" (EMS).

CERCLA and EPCRA are Federal laws that require immediate reporting of a release of a Hazardous Substance (HS) and an Extremely Hazardous Substance (EHS), respectively, in a Reportable Quantity (RQ) or more within a 24-hour period.

DOE's Occurrence Reporting requirements establish a system for reporting operations information related to DOE-owned or -operated facilities (including Power Administration facilities) and processing that information to provide for appropriate corrective action. Releases of HSs or EHSs can be categorized (in order of decreasing severity) as Emergencies, Unusual Occurrences, and Off-Normal Occurrences. Each category of Occurrence requires a different level of reporting and response.

Releases that have been categorized as Emergencies are also subject to reporting under DOE's EMS. The EMS provides a framework for development, coordination, and direction of the planning, preparedness, and readiness assurance activities. Releases of HSs or EHSs that have been categorized as Emergencies can be classified (in order of decreasing severity) as General Emergencies, Site-area Emergencies, and Alerts. Each class of emergency requires a different level of reporting and response.

#### **Purpose**

To help explain the process of complying with distinct but sometimes overlapping requirements, the Office of Environmental Guidance, RCRA/CERCLA Division (EH-231), developed this guidance on hazardous substance release reporting. The requirements outlined in this guidance apply to all DOE facilities (Government-Owned, Contractor-Operated; Government-Owned, Government-Operated; and Power Administration facilities).

In accordance with Section 103 of CERCLA and 40 CFR 302.6, the person in charge of a DOE facility is responsible for reporting a release of an HS to the National Response Center (NRC). Similarly, DOE Orders 5000.3B, 5500.1B, and 5500.2B require that the facility manager promptly report HS releases that are categorized as reportable Occurrences to DOE and all applicable Federal, State, local, and tribal authorities. The facility manager at DOE-owned, contractor-operated facilities will be a contractor. Therefore, in accordance with the July 19, 1990,

S-3 (DP-9) "Emergency Management and Off-Site Notification" policy memorandum issued by the Under Secretary, the contractor managing the facility from which an HS has been released will be responsible for complying with the reporting requirements unless DOE has

formally reclaimed that responsibility. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.

#### How to Use this Guidance

This guidance uses a flowchart, supplemental information, and tables to provide an overview of the process to be followed, and more detailed explanations of the actions that must be performed, when chemical releases of HSs, EHSs, pollutants, or contaminants occur at DOE facilities. This guidance should be used in conjunction with, rather than in lieu of, applicable laws, regulations, and DOE Orders. Relevant laws, regulations, and DOE Orders are referenced throughout this guidance.

The flowchart is the central element of this guidance. The procedures that must be followed in response to a release are determined by the nature of the release. The flowchart outlines the appropriate path of actions to follow by providing clear decision points (diamonds) that allow the user to chose the correct course of action (rectangles) for a specific release.

Additional guidance for each step of the flowchart is provided in the "Supplemental Information" for the Release Reporting Flowchart (beginning on page 5). This document is designed to allow the user to view the flowchart and the supplemental information simultaneously. The supplemental information should be used to clarify and expand upon the information contained in the flowchart.

Two tables, "Categorization of Occurrences" and "Classification of Emergencies" follow the Supplemental Information. These tables provide additional assistance and guidance for categorizing and classifying releases according to the systems outlined in DOE's Occurrence Reporting and EMS requirements.

Three appendices have been attached that list and provide reportable quantities for (1) CERCLA Hazardous Substances (Appendix I), CERCLA Radionuclides (Appendix II), and EPCRA Extremely Hazardous Substances (Appendix III). Please note that these appendices may not contain all current hazardous substances or extremely hazardous substances. These lists are to be used in conjunction with, not in lieu of, the appropriate Federal regulations. (These appendices were prepared by ERM Computer Services, Inc., from computer tapes of the Federal Register and Code of Federal Regulations provided by the U. S. Government Printing Office. The tables are current as of November 1993.)

#### **Additional Requirements**

This guidance is not intended to detail the planning or preparedness phases of DOE's EMS. [DOE Order 5500.3A (9)(b)] However, be aware that as part of the EMS, DOE Elements and DOE contractors must establish and maintain emergency management programs consisting of plans and procedures for response to Operational Emergencies involving or affecting DOE facilities, including DOE transportation activities.

The programs must include the following elements:

- Emergency Response Organization,
- Off-site Response Interfaces,
- Operational Emergency Event Classes,
- · Notification,
- Consequence Assessment,
- Protective Actions,
- · Medical Support,
- Recovery and Reentry,
- Public Information,
- Emergency Facilities and Equipment,
- Training,
- · Drills and Exercises, and
- Program Administration.

Also, facilities must establish Emergency Readiness Assurance Programs (ERAPs) and Appraisal Programs, as set forth in DOE Order 5500.10. [DOE Order 5500.3A (11)(a)]

# Supplemental Information for the Release Reporting Flowchart

#### Step 1 Start

As defined by CERCLA 101(22), a **release** is any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, or other closed receptacles containing any hazardous substance or pollutant or contaminant).

Hazardous Substances (HSs) regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) are listed in 40 CFR 302.4. Table 302.4 of that regulation, "List of Hazardous Substances and Reportable Quantities," is reproduced in Appendix I of this guidance. Appendix B of that regulation, the list of HS radionuclides and their reportable quantities, is reproduced in Appendix II of this guidance.

Extremely Hazardous Substances (EHSs) regulated under the Emergency Planning and Community Right to Know Act (EPCRA) are listed in 40 CFR 355 Appendix A. That appendix is reproduced in Appendix III of this guidance.

EPA has published a "List of Lists" that is a compendium of the lists of chemicals subject to reporting under EPCRA. These lists include the list of EPCRA EHSs, the list of CERCLA HSs, and the list of EPCRA 313 Toxic Chemicals. This publication is updated periodically and is available by calling the EPA EPCRA Hotline at (800) 535-0202.

Note: There is considerable overlap between the lists of EHSs and HSs.

- YES If a release of an HS or EHS has occurred, proceed to Step 4 for guidance on applicable release reporting requirements under CERCLA or EPCRA.
- NO If the material released is not an HS or EHS, proceed to Step 3 for guidance on applicable release reporting requirements under the DOE Occurrence Reporting System.
- **Step 3** Events or conditions that do not involve releases of HSs or EHSs may still be reportable under DOE's Occurrence reporting requirements. See the DOE 5000 series Orders for more information on responding to events and conditions that do not involve releases of HSs or EHSs.

An event is a real-time Occurrence (e.g., pipe break, valve failure, loss of power, environmental spill, etc.).

A condition is any as-found state, whether or not resulting from an event, that may have adverse safety, health, quality assurance, security, operational, or environmental implications. A condition is more programmatic in nature. For example, an error in analysis or calculation, an anomaly associated with design or performance, or an indication of a weakness in the management process are all conditions. [DOE Order 5000.3B (5)]

Step 4 The Reportable Quantity (RQ) applies to the amount of HSs or EHSs released within a 24-hour period. Note that the 24-hour period is the time frame for measuring the quantity released, not a time frame for reporting the release.

The RQ for each HS is designated in 40 CFR 302.4 Table 302.4, and that table is reproduced as Appendix I to this guidance. The RQ list for radionuclides is designated in 40 CFR 302.4 Appendix B, which is reproduced as Appendix II to this guidance. The RQ for each EHS is listed in 40 CFR 355 Appendix A, which is reproduced as Appendix III to this guidance. DOE has developed a computer program called "RQ Calculator" that can be used to facilitate comparisons of the quantity released with the applicable RQs. The RQ Calculator translates various units of measurement into the RQ unit; pounds for hazardous waste and curies for radionuclides. \(^1\)

- YES If an RQ of an HS or EHS has been released, reporting under either CERCLA or EPCRA, or both, may be required; proceed to Step 5.
- NO If an RQ of an HS or EHS has not been released, CERCLA and EPCRA reporting is not required; proceed to Step 8.
- Step 5 (A) Exclusions from CERCLA episodic release reporting are (1) releases that are excluded from the definition of "release" under CERCLA 101(22), (2) continuous releases as defined by 40 CFR 302.8, (3) federally permitted releases as defined in CERCLA 101(10), (4) releases that are exempted by 40 CFR 302.6(c), (5) releases that are exempted by 40 CFR 302.6(d), (6) releases already reported pursuant to CERCLA 103(c), and (7) the normal application of pesticides.
  - The term "release" under CERCLA 101(22) excludes the following:
    - Any release that results in exposure to persons solely within a workplace, regarding a claim that such persons may assert against the employer of such persons;

<sup>&</sup>lt;sup>1</sup> The RQ Calculator has been distributed through normal EH-231 channels. For more information on the RQ Calculator software, contact EH-231 at (202) 586-5047.

- Emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine;
- Release of source, byproduct, or special nuclear material from a nuclear incident, as those terms are defined in the Atomic Energy Act of 1954 (AEA), if such release is subject to requirements regarding financial protection established by the Nuclear Regulatory Commission under Section 170 of the AEA, or for the purposes of CERCLA 104 or any other response action, any release of source, byproduct, or special nuclear material from any processing site designated under Sections 102(a)(1) or 302(a) of the Uranium Mill Tailings Radiation Control Act of 1978; and
- The normal application of fertilizer.
- 40 CFR 302.8 provides for <u>reduced</u> reporting of releases of hazardous substances that are continuous and stable in quantity and rate as described in 40 CFR 302.8(b).
- CERCLA 103(a) provides an exemption from CERCLA notification requirements for federally permitted releases of hazardous substances. The term "federally permitted release," as defined in CERCLA 101(10), means:
  - Discharges in compliance with a permit under Section 402 of the Federal Water Pollution Control Act (FWPCA);
  - Discharges resulting from circumstances identified and reviewed and made part of the public record regarding a permit issued or modified under FWPCA 402 and subject to a condition of such permit;
  - Continuous or anticipated intermittent discharges from a point source, identified in a permit or permit application under FWPCA 402, that are caused by events occurring within the scope of relevant operating or treatment systems;
  - Discharges in compliance with a legally enforceable permit under FWPCA 404;
  - Releases in compliance with a legally enforceable final permit issued pursuant to Section 3005(a) through (d) of the Solid Waste Disposal Act from a hazardous waste treatment, storage, or disposal facility when such permit specifically identifies the hazardous substances and makes such substances subject to a

standard practice, control procedure, or bioassay limitation or condition, or other control on the hazardous substances in such releases;

- Any release in compliance with a legally enforceable permit issued under Sections 102 and 103 of the Marine Protection, Research, and Sanctuaries Act of 1972;
- Any injection of fluids authorized under Federal underground injection control programs or State programs submitted for Federal approval (and not disapproved by the Administrator of the Environmental Protection Agency) pursuant to Part C of the Safe Drinking Water Act;
- Any emission into the air subject to a permit or control regulation under Section 111, Section 112, Title I Part C, Title I Part D, or State implementation plans submitted in accordance with Section 110 of the Clean Air Act (CAA) (and not disapproved by the Administrator of the Environmental Protection Agency), including any schedule or waiver granted, promulgated, or approved under these Sections;
- Any injection of fluids or other materials authorized under applicable State law (1) for the purpose of stimulating or treating wells for the production of crude oil, natural gas, or water, (2) for the purpose of secondary, tertiary, or other enhanced recovery of crude oil or natural gas, or (3) that are brought to the surface in conjunction with the production of crude oil or natural gas and that are reinjected;
- The introduction of any pollutant into a publicly owned treatment works when such pollutant is specified in and in compliance with applicable pretreatment standards of the Clean Water Act (CWA) Section 307(b) or (c) and enforceable requirements in a pretreatment program submitted by a State or municipality for Federal approval under CWA 402; and
- Any release of source, special nuclear, or byproduct material, as those terms are defined in AEA, in compliance with a legally enforceable license, permit, regulation, or order issued pursuant to AEA.
- In addition, 40 CFR 302.6(c) exempts the following categories of releases from the notification requirements of CERCLA 103:

- Releases of those radionuclides that occur naturally in the soil from land holdings such as parks, golf courses, or other large tracts of land;
- Releases of radionuclides occurring naturally from the disturbance of land for purposes other than mining, such as for agricultural or construction activities;
- Releases of radionuclides from the dumping of coal and coal ash at utility and industrial facilities with coal-fired boilers; and
- Releases of radionuclides from coal and coal ash piles at utility and industrial facilities with coal-fired boilers.
- Also, 40 CFR 302.6(d) provides that except for releases of radionuclides, notification of the release of an RQ of solid particles of antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, or zinc is not required if the mean diameter of the particles released is larger than 100 micrometers (0.004 inch).
- CERCLA 103(c) requires that any person who owns or operates or who at the time of disposal owned or operated a facility that is not a RCRA Subtitle C facility with an interim or final permit, and at which hazardous substances are or have been stored, treated, or disposed of, shall provide a one-time notification to EPA of the existence of such facility, specifying the amount and type of any hazardous substance to be found there, and any known, suspected, or likely releases of such substances from such facility.
- The normal application of a pesticide registered under the Federal Insecticide, Fungicide, and Rodenticide Act, or the handling and storage of such a pesticide product by an agricultural producer, is exempt from CERCLA notification requirements under CERCLA 103(e).
- (B) <u>Exclusions from EPCRA</u> 304 emergency release notification are the following:
  - Any release that results in exposure to persons solely within the boundaries of the facility;

Note: Although technically required only to report releases that extend beyond the site boundary, EPA strongly encourages facility owners and operators to report all releases that equal

or exceed an RQ to the appropriate State Emergency Response Commission (SERC) or Local Emergency Planning Committee (LEPC) when that release is "into the environment" (EPA 9360.7-06 November 1990). Doe facility managers should report all releases into the environment that equal or exceed an RQ, unless absolutely certain that the release has not and never will extended across the site boundary. The basis for such a determination should be appropriately documented. (The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.

- Any release that is a "federally permitted release" as defined in CERCLA 101(10);
- Any release that is continuous and stable in quantity and rate under the definitions of 40 CFR 302.8(b);
- Any release of a pesticide product exempt from CERCLA 103(a) reporting under CERCLA 10?(e);
- Any release not meeting the definition of "release" under CERCLA 101(22), and therefore exempt from CERCLA 103(a) reporting; and
- Any of the following radionuclide releases that occur:
  - Naturally in soil from land holdings such as parks, golf courses, or other large tracts of land;
  - Naturally from the disturbance of land for purposes other than mining, such as for agricultural or construction activities;
  - From the dumping of coal and coal ash at utility and industrial facilities with coal-fired boilers; and
  - From coal and coal ash piles at utility and industrial facilities with coal-fired boilers. [40 CFR 355.40(a)(2)(vi)]

YES If the release is excluded from all CERCLA and EPCRA emergency release reporting requirements, proceed to Step 8 to determine if the release may still be subject to DOE Occurrence Reporting.

- NO If the release is **not** excluded from all CERCLA and EPCRA emergency release reporting requirements (i.e., is subject to any such requirements), proceed to Step 6 for guidance on release reporting under either CERCLA or EPCRA, or both.
- When it is determined that an RQ of an HS has been released into the environment within a 24-hour period, the person in charge of the facility (i.e., generally the Facility Manager) must immediately (i.e., as soon as is practicable) telephone the National Response Center. (The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.)

When notifying the National Response Center, be prepared to provide the following information to the extent known at the time of notification and so long as no delay in notice or emergency response results:

- The location of the release,
- The type of material released,
- The estimated quantity released,
- The time and date of the release, and
- The possible source or sources of the release. [40 CFR 300.405(d)]

In addition to notifying the National Response Center, when an **RQ** of an **HS** is released into the environment, EPCRA release reporting requirements may also need to be met.

Reporting under EPCRA is required only when there is a release into the environment that goes beyond the facility/site boundary. [EPCRA 304] If the facility manager is <u>positive (i.e., 100 percent certain)</u> that the release will not migrate beyond the facility/site boundary, then reporting to State and local officials is not required. However, if the facility manager is not <u>absolutely certain</u> that the release will remain on site, the release should be reported under EPCRA, as well as to the National Response Center under CERCLA.

To report a release under EPCRA, the facility manager must notify the appropriate State Emergency Response Commission (SERC) and the Local Emergency Planning Committee (LEPC). If there is no LEPC, notification shall be provided to relevant local emergency response personnel. [40 CFR 355.40(b)]

• Although all releases of CERCLA HSs into the environment that have the potential to go beyond the facility boundary must be reported to the National Response Center, SERC, and LEPC, a similar release of an EHS that is not a CERCLA HS need not be reported to the National Response Center.

When notifying the SERC or LEPC be prepared to provide the following information to the extent known at the time of notice and so long as no delay in notice or emergency response results:

- The chemical name or identity of any substance involved in the release;
- An indication of whether the substance is an EHS;
- An estimate of the quantity of any such substance that was released into the environment;
- The time and duration of the release;
- The medium or media into which the release occurred;
- Any known or anticipated acute or chronic health risks associated with the release; and
- Where appropriate, advice regarding medical attention necessary for exposed individuals, proper precautions (including evacuation) to take as a result of the release (unless such information is readily available to the community emergency coordinator pursuant to the emergency plan), and the names and telephone numbers of the persons to be contacted for further information. [40 CFR 355]
- As soon as is practicable after a reportable release of an HS or EHS under EPCRA, the Facility Manager must provide a written follow-up emergency notice to the SERC and LEPC, updating the information previously provided in the oral notification (See Step 6), and including additional information regarding the following:
  - Actions taken to respond to and contain the release;
  - Any known or anticipated acute or chronic health risks associated with the release; and

• Where appropriate, advice regarding medical attention necessary for exposed individuals. [40 CFR 355.40(b)(3)]

**Note:** The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.

- Step 8 Specifically excluded from DOE's Occurrence Reporting requirements (see DOE Order 5000.3B 3) are:
  - Occurrence reporting and processing of operations information for activities that are regulated by the Nuclear Regulatory Commission (NRC) or a State under an agreement with the NRC;
  - Reporting by the Power Marketing Administrations of major electrical power outages, disturbances, and fuel shortages that are subject to the emergency power system reporting requirements prescribed in 10 CFR 205 and 350 through 354, Report of Major Electric Utility Systems Emergencies;
  - The Naval Nuclear Propulsion Program [Paragraph 9h];
  - Reporting required by other DOE Orders for normal record-keeping purposes (e.g., DOE Order 5484.1); and
  - Additional reporting as required by external regulatory agencies.
  - YES If the release is excluded from DOE Occurrence Reporting, proceed to Step 10. If the release is an Emergency, it may still be reportable under the Emergency Management System (EMS).
  - NO If the release is not excluded from DOE Occurrence Reporting, proceed to Step 9 for guidance on appropriate action if the release is a recurring event.
- Step 9 For Occurrences resulting from and directly related to a previously identified cause that is currently documented in a non-finalized Occurrence Report, the Facility Manager, with concurrence from the Facility Representative and the Program Manager, may submit a 10-Day Update Report in lieu of a new Occurrence Report. The 10-Day Update Report must be submitted with the new information by the close of the next business day from the time of categorization (not to exceed 80 hours). [DOE Order 5000.3B 8.a.(3) and 8.b.(2)]

**Note:** A recurring release of a CERCLA HS or an EHS may qualify as a continuous release (see 40 CFR 302.8).

- YES If the release is a recurring Occurrence, go to Step 34 and submit a 10-Day Update Report.
- **NO** If the release is not a recurring Occurrence, go to Step 14 and perform the initial notification, categorization, and initial response.
- Step 10 Operational Emergencies are the most serious events and consist of any unwanted operational, civil, natural-phenomenon, or security Occurrence that could endanger or adversely affect people, property, or the environment (DOE Order 5500.1B Attachment 2 (17)). Emergencies require an increased alert status for on-site personnel and, in specified cases, for off-site authorities. Use Attachment I of DOE Order 5000.3B for assistance in determining whether or not a release must be categorized as an Emergency. Table 1 of this document also provides selected examples of Emergency Occurrences.
  - Note: The lists in Table 1, as well as in Attachment I in DOE Order 5000.3B, are not intended to be all-inclusive. Their purpose is to categorize Occurrences so that DOE field and operating contractors understand the degree of significance that is associated with the emergency, unusual, and off-normal categories defined in DOE Order 5000.3B. They provide a minimum set of standards necessary to allow specific sites/facilities to develop and document specific Reportable Occurrences applicable to their operations. [DOE Order 5000.3B Attachment 1]
  - YES If the release is an Emergency, proceed to Step 12 to determine if the release must be reported under the Emergency Management System (EMS).
  - **NO** If the release is not an Emergency, proceed to Step 11.
- In Step 8 it was determined that this release was exempt from DOE's Occurrence Reporting requirements. Since only releases categorized as Emergencies are subject to EMS reporting requirements, this release is not subject to either DOE's Occurrence Reporting or the EMS emergency reporting. Stop.
- Step 12 The following exclusions from the EMS are provided by DOE Order 5500.1B:
  - All DOE facilities subject to Nuclear Regulatory Commission license requirements are specifically exempted from the requirements of this Order.
  - The Navy Nuclear Propulsion Program is exempt from the provisions of the DOE 5500 series Orders.
  - The **Power Marketing Administrations** are exempt from DOE Order 5500.1B because they have submitted DOE Order 5400.PMA to S-1 for

- approval. This Order provides emergency management directives appropriate to their specific regional power missions and is compatible with DOE's EMS and supplementary DOE EMS directives.
- An EMS exemption may be requested if a DOE Element or contractor can demonstrate that it is subject to emergency management program requirements under the authority of other Federal regulatory agencies that are at least as stringent as the requirements of DOE Order 5500.1B. Requests for exemptions from the requirements of this Order shall document the basis for each exemption and shall establish and justify alternatives equivalent to, or exceeding, this Order. Requests for exemptions shall be submitted for approval by the Under Secretary, with the concurrence of (1) the cognizant Program Secretarial Officers (PSO); (2) the Director of Emergency Operations (DEO); and if applicable, (3) the Assistant Secretary for Environment, Safety, and Health (EH-1). The Under Secretary shall resolve any differences among the PSO, DEO, and, if applicable, EH-1.
- YES Since this facility is excluded from the EMS and it has been determined (in Step 8) that the release is not subject to DOE Occurrence Reporting, proceed to Step 13.
- NO This release is subject to DOE's EMS requirements; proceed to Step 18.
- Step 13 The remainder of this flowchart only applies to releases that are subject to either DOE's Occurrence Reporting or EMS emergency reporting requirements. Stop.
- The facility staff and operators must identify and promptly notify the Facility Manager of abnormal events and conditions, and record and archive all information pertaining to such Occurrences. [DOE Order 5000.3B 8.a.(1)] (The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.)
  - The Facility Manager is responsible for the initial identification and categorization of the event. [DOE Order 5500.1B 9.c.(2)(a)1]
    - Categorization of Reportable Occurrences must be made as soon as is practicable and, in all cases, within 2 hours of identification. If categorization is not clear, then the Occurrence must be initially categorized at the higher level being considered. [DOE Order 5000.3B 7.a.] See Steps 15, 25, and 27 for guidance in classifying releases as Emergencies, Unusual Occurrences, or Off-Normal Occurrences.

- Appropriate immediate response(s) must be taken by contractor operations personnel to stabilize or return the facility/operation to a safe condition. [DOE Order 5000.3B 8.a.(2)]
- Operational Emergencies are the most serious events and consist of any unwanted operational, civil, natural-phenomenon, or security Occurrence that could endanger or adversely affect people, property, or the environment.

  [DOE Order 5500.1B Attachment 2 (17)] Emergencies require an increased alert status for on-site personnel and, in specified cases, for off-site authorities. Use Attachment I in DOE Order 5000.3B or Table 1 (Categorization of Occurrences) for assistance in determining if a release must be categorized as an Operational Emergency.
  - Note: The lists in Table 1, as well as in Attachment I in DOE Order 5000.3B, are not intended to be all-inclusive. Their purpose is to categorize Occurrences so that DOE field and operating contractors understand the degree of significance that is associated with the emergency, unusual, and off-normal categories defined in DOE Order 5000.3B. They provide a minimum set of standards necessary to allow specific sites/facilities to develop and document specific Reportable Occurrences applicable to their operations. [DOE Order 5000.3B Attachment 1]
  - YES If the release is an Operational Emergency, proceed to Step 16 for guidance on appropriate notification requirements.
  - NO If the release is not an Operational Emergency, proceed to Step 25 to determine if the release is an Unusual Occurrence.
- Oral notification to DOE and off-site authorities of Emergencies must be made within 15 minutes or less of categorization.

  [DOE Order 5000.3B 7.b.(1)]
  - A Notification Report must be prepared and submitted as soon as is practicable, but, in all cases, before close of the next business day from the time of categorization (not to exceed 80 hours).
     [DOE Order 5000.3B 7.b.(1)]

The Facility Manager must prepare and submit the Notification Report (fields 1 through 18 of the Occurrence Report), and distribute it to the DOE Facility Representative and Program Manager. When an unclassified Notification Report is submitted using the computerized DOE Occurrence Reporting and Processing System (ORPS) data base, the distribution requirement is automatically satisfied. [DOE Order 5000.3B 8.a.(10)] (The facility manager at DOE-owned, contractor-operated facilities will be a

contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.)

- Step 17 The following exclusions from the EMS are provided by DOE Order 5500.1B:
  - All DOE facilities subject to Nuclear Regulatory Commission license requirements are specifically exempted from the requirements of this Order.
  - The Navy Nuclear Propulsion Program is exempt from the provisions of the DOE 5500 series Orders.
  - The **Power Marketing Administrations** are exempt from DOE Order 5500.1B because they have submitted DOE Order 5400.PMA to S-1 for approval. This Order provides emergency management directives appropriate to their specific regional power missions and is compatible with DOE's EMS and supplementary DOE EMS directives.
  - An EMS exemption may be requested if a DOE Element or contractor can demonstrate that it is subject to emergency management program requirements under the authority of other Federal regulatory agencies that are at least as stringent as the requirements of DOE Order 5500.1B. Requests for exemptions from the requirements of this Order shall document the basis for each exemption and shall establish and justify alternatives equivalent to, or exceeding, this Order. Requests for exemptions shall be submitted for approval by the Under Secretary, with the concurrence of (1) the cognizant Program Secretarial Officers (PSO); (2) the Director of Emergency Operations (DEO); and if applicable, (3) the Assistant Secretary for Environment, Safety, and Health (EH-1). The Under Secretary shall resolve any differences among the PSO, DEO, and, if applicable, EH-1.
  - YES Since this facility program event or condition is excluded from the EMS proceed to Step 30.
  - NO This release is subject to DOE's EMS requirements; proceed to Step 18.
- Take immediate mitigative and corrective actions (see note) to minimize the consequences to worker and public health and safety and the environment. Mitigative and corrective actions include recommending appropriate protective actions to local authorities.

  [DOE Order 5500.1B 9.c.(2)(a)3]

These actions must continue until the Emergency is resolved. [DOE Order 5500.1B 9.c.(2)(a)4]

Note: For the purposes of the EMS, corrective actions are defined as those measures taken to terminate or mitigate the consequence of an Emergency at or near the source of the Emergency.

[DOE Order 5500.1B Attachment 2 (14)]

The manager of the facility (as defined in the DOE 5500 series Orders), whether a DOE or a DOE contractor employee, is responsible for informing DOE line management about all aspects of the response to the Emergency. [DOE Order 5500.1B 9.c.(2)(a)5] (The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.)

DOE HQ and the cognizant DOE Facility Representative receive simultaneous notifications of Emergencies from the Facility Manager. The scope and extent of additional DOE response actions will be determined by the cognizant HQ Program Office in conjunction with the cognizant DOE Field Element. [DOE Order 5500.1B 9.c.(2)(d)]

The manager of the facility, whether a DOE or DOE contractor employee, is required to promptly notify State, tribal, local, DOE, and other Federal agencies of events categorized as Emergencies. The DOE Facility Representative shall oversee the contractor's or responsible DOE Element's notification process. The DOE Facility Representative shall make notifications of applicable DOE emergency events for situations not covered by a contractor's or other DOE Element's notification process. [DOE Order 5500.2B 9.a.]

The DOE Headquarters Emergency Operations Center (EOC) serves as the focal point for all emergency notifications and reports. The HQ EOC receives, coordinates, and disseminates emergency information to HQ Elements and Program Office emergency points of contact, Congressional offices, the White House Situation Room, and other Federal agencies. [DOE Order 5500.2B 9.c.]

Note: All communications concerning an Emergency must be reviewed for classified information and unclassified controlled nuclear information prior to transmittal and must be protected accordingly. [DOE Order 5500.2B 12.]

Note: The three classes of Operational Emergencies are defined as follows, listed in order of decreasing severity: (1) General Emergency, (2) Site-area Emergency, and (3) Alert.

Differentiation of these classes by severity is for the purpose of specifying appropriate emergency actions, including required

response activities and notification, commensurate with the degree of hazard presented by the event. [DOE Order 5500.2B 11.a.(2)] See **Table 2 (Classification of Emergencies)** and Steps 14, 16, and 18 for additional guidance on classifying emergency releases.

- Step 19 A General Emergency represents events that are in progress or have occurred that involve actual or imminent catastrophic failure of facility safety systems with potential for loss of confinement integrity, catastrophic degradation of facility protection systems, or catastrophic failure in safety or protection systems threatening the integrity of a weapon or test device that could lead to substantial off-site impacts. Any environmental release of hazardous materials that can reasonably be expected to exceed the appropriate Protective Action Guide (PAG) or Emergency Response Planning Guide (ERPG) exposure levels off-site is classified as a General Emergency. [DOE Order 5500.1B Attachment 2 (43)] See Table 2 (Classification of Emergencies) for more information on classifying an emergency release as a General Emergency.
  - YES If the release is a General Emergency; proceed to Step 20 for guidance on appropriate response requirements.
  - **NO** If the release is **not** a General Emergency; proceed to Step 21 to determine if the release is a Site-area Emergency.
- Step 20 Declaration of a General Emergency requires notifying, mobilizing, and dispatching all appropriate emergency response personnel and equipment, including appropriate DOE national response assets to accomplish the following: [DOE Order 5500.2B 11.a.(2)(c)]
  - Activate the response centers and other emergency assets to provide continuous assessment of information;
  - Establish communications, consultation, and liaison with off-site authorities, and recommend predetermined protective actions for the public;
  - Provide information to the public through off-site authorities and the media;
  - · Conduct or assist evacuations and sheltering;
  - Conduct appropriate assessments, investigations, or sampling and monitoring;
  - Mitigate the severity of the actual or potential consequences; and

 Mobilize and dispatch appropriate emergency response groups or security forces.

#### Proceed to Step 30.

- A Site-area Emergency represents events that are in progress or have occurred involving actual or likely major failure(s) of facility safety or safeguard systems needed for the protection of on-site personnel, public health and safety, the environment, or national security. During a Site-area Emergency, any environmental releases of hazardous materials are not expected to exceed the appropriate PAG or ERPG exposure levels off-site. [DOE Order 5500.1B Attachment 2 (69)] See Table 2 (Classification of Emergencies) for more information about classifying an emergency release as a Site-area Emergency.
  - YES If the release is a Site-area Emergency; proceed to Step 22 for guidance on appropriate response requirements.
  - NO If the release is **not** a Site-area Emergency, it must be an Alert; proceed to Step 23 for guidance on responding to Alerts.
- Step 22 Declaration of a Site-area Emergency requires initiation of predetermined protective actions for on-site personnel and the notification and assembly of emergency response personnel and equipment to activate response centers to accomplish the following: [DOE Order 5500.2B 11.a.(2)(b)]
  - Provide continuous assessment of pertinent information for DOE decision makers, off-site authorities, and other appropriate entities;
  - Establish communications, consultation, and liaison with off-site authorities:
  - Provide information to the public through off-site authorities and the media;
  - Conduct or assist in any evacuations and sheltering;
  - Conduct appropriate assessments, investigations, or sampling and monitoring;
  - Mitigate the severity of the actual or potential consequences; and
  - Mobilize appropriate emergency response groups or security forces for immediate dispatch should the situation become more serious.

#### Proceed to Step 30.

- An Alert represents events in progress or having occurred that involve an actual or potential substantial reduction for the level of facility safety and protection.

  During an Alert, any environmental release of hazardous materials is expected to be limited to small fractions of the appropriate PAG or ERPG on-site. [DOE Order 5500.1B Attachment 2 (6)] See Table 2 (Classification of Emergencies) for more information about classifying emergency releases as Alerts.
- Step 24 Declaration of an Alert requires the availability of personnel and resources to accomplish the following: [DOE Order 5500.2B 11.a.(2)(a)]
  - Provide continuous assessment of pertinent information for DOE decision makers, off-site authorities, the public, and other appropriate entities;
  - Conduct appropriate assessments, investigations, or preliminary or confirmatory sampling and monitoring;
  - Mitigate the severity of the Occurrence or its consequences; and
  - Prepare for other response actions should the situation become more serious, requiring emergency response organizations to mobilize or activate resources.

#### Proceed to Step 30.

- Step 25 An Unusual Occurrence is a non-emergency Occurrence that has significant impact or potential for impact on safety, environment, health, security, or operations. [DOE Order 5000.3B 7.a.(2)] Table 1 (Categorization of Occurrences) provides more information about the types of Occurrences that are to be categorized as Unusual Occurrences.
  - Note: The lists in Table 1, as well as in Attachment I in DOE Order 5000.3B, are not intended to be all-inclusive. Their purpose is to categorize Occurrences so that DOE field and operating contractors understand the degree of significance that is associated with the emergency, unusual, and off-normal categories defined in DOE Order 5000.3B. They provide a minimum set of standards necessary to allow specific sites/facilities to develop and document specific Reportable Occurrences applicable to their operations. [DOE Order 5000.3B Attachment 1]
  - YES If the release is an Unusual Occurrence; proceed to Step 26 for guidance on appropriate requirements.
  - **NO** If the release is **not** an Unusual Occurrence; proceed to Step 27 for guidance on determining if the release is an Off-Normal Occurrence.

• Oral notification to DOE of Unusual Occurrences must be made as soon as sufficient information is obtained to indicate the general nature and extent of the Occurrence, but in all cases, within 2 hours of categorization.

[DOE Order 5000.3B 7.b.(2)]

For oral notification, the Facility Manager must simultaneously contact (1) the DOE Facility Representative and (2) the HQ Emergency Operations Center (EOC), through which the DOE Program Manager and any other necessary program staff can be located and direct communication links with the Facility Manager be established. The Facility Manger may use the local Field/Site EOC to expedite establishing the direct communication link required above. [DOE Order 5000.3B 8.a.(5)] (The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.)

• A Notification Report must be prepared and submitted before the close of the next business day from the time of categorization (not to exceed 80 hours). [DOE Order 5000.3B 7.b.(2)] The Facility Manager must prepare and submit the Notification Report (fields 1 through 18 of the Occurrence Report), and distribute it to the DOE Facility Representative and Program Manager. When an unclassified Notification Report is submitted using the computerized DOE ORPS data base, the distribution requirement is automatically satisfied. [DOE Order 5000.3B 8.a.(10)]

#### Proceed to Step 30.

Step 27 Off-Normal Occurrences are abnormal or unplanned events or conditions that adversely affect, potentially affect, or are indicative of degradation in, the safety, security, environmental or health protection performance or operation of a facility. [DOE Order 5500.1B Attachment 2 (52)] See Table 1 (Categorization of Occurrences) for more information about the types of Occurrences that are to be categorized as Off-Normal Occurrences.

Note: The lists in Table 1, as well as in Attachment I in DOE Order 5000.3B, are not intended to be all-inclusive. Their purpose is to categorize Occurrences so that DOE field and operating contractors understand the degree of significance that is associated with the emergency, unusual, and off-normal categories defined in DOE Order 5000.3B. They provide a minimum set of standards necessary to allow specific sites/facilities to develop and document specific Reportable Occurrences applicable to their operations. [DOE Order 5000.3B Attachment 1]

YES If the release is an Off-Normal Occurrence, proceed to Step 29 for guidance on appropriate reporting requirements.

NO If the release is not an Off-Normal Occurrence, proceed to Step 28.

Step 28 If the release does not meet the criteria for an Operational Emergency, an Unusual Occurrence, or an Off-Normal Occurrence, then it is not covered by DOE's Occurrence Reporting or Emergency Management System reporting requirements.

Note: The guidance in Step 28 is based on the determination that the event or condition in question involves a release that is not an Operational Emergency, an Unusual Occurrence, or an Off-Normal Occurrence. However, if the event or condition is a Non-Operational Emergency (i.e., Energy and Continuity of Government Emergency) then it may be subject to the Occurrence Reporting or the EMS.

Although an emergency release would be classified as "Operational" rather than "Energy" or "Continuity of Government", this flowchart should not be misinterpreted to imply that Energy or Continuity of Government Emergencies that happen to also involve releases are exempt from Occurrence Reporting or the EMS. See the DOE 5000 series Orders for more information on responding to this event or condition if it may be a Non-Operational Emergency. Stop.

- For Off-Normal Occurrences, oral notification to DOE is not mandatory; however, a Notification Report must be prepared and submitted before the close of the next business day from the time of categorization (not to exceed 80 hours). [DOE Order 5000.3B 7.b.(3)] The Facility Manager must prepare and submit the Notification Report (fields 1 through 18 of the Occurrence Report), and distribute it to the DOE Facility Representative and Program Manager. When an unclassified Notification Report is submitted using the computerized DOE ORPS data base, the distribution requirement is automatically satisfied. [DOE Order 5000.3B 8.a.(10)] (The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.)
- Step 30 Occurrence Reports that are prepared in accordance with DOE Order 5000.3B at DOE facilities where classified operations are conducted or classified information may be generated must be reviewed by an authorized classifier (AC) prior to being distributed in hard copy or via the ORPS. At these facilities, a log or other equivalent record must be maintained of reports submitted to the AC, including the date and time of submission, the individual who proposed them, the date and time of AC review, and the AC's name and position.

  [DOE Order 5000.3B 7.e.(2)]

- YES If classified operations are conducted at the facility, proceed to Step 32 for guidance on requirements for sanitizing the Occurrence Report.
- NO If there are no classified operations conducted or classified information generated at the facility, proceed to Step 31.
- Step 31 An Occurrence Report must be prepared for all Reportable Occurrences, according to the instructions provided in INSTRUCTIONS FOR COMPLETING AN OCCURRENCE REPORT. [DOE Order 5000.3B Attachment II]

The Facility Manager must determine and document in the Occurrence Report, as soon as is practicable, the following: [DOE Order 5000.3B 8.b.(1)]

- The significance, nature and extent of the event or condition;
- The cause(s) of the event or condition, including the root cause(s) as appropriate; and
- The corrective actions to be taken to correct the condition and prevent recurrence.

**Note:** The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.

#### Proceed to Step 33.

- Step 32 For Notification Reports, 10-Day Occurrence Reports, and Final Occurrence Reports that are determined by the AC to contain classified information, the complete reports must be distributed to the DOE Facility Representative and Program Manager in hard copy in accordance with DOE Order 5000.3B and DOE 5635 series Orders. The Facility Manager, after a review by an AC and removal of all classified material, must then enter the sanitized report into ORPS. [DOE Order 5000.3B 7.e.(3)] (The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.)
- Step 33 Changes in an Occurrence may involve further degradation in the level of safety of the facility or other worsening conditions, any change from one Emergency class or category to another, or termination of an Emergency.

  [DOE Order 5000.3B 7.c.]

- YES If there has been a change in the condition of the Occurrence, proceed to Step 34 for guidance about procedures for responding to changes in conditions.
- NO If there has not been a change in the condition of the Occurrence, proceed to Step 37.
- Step 34 In addition to the initial oral notifications, follow-up oral notification must be made to DOE for any of the following: [DOE Order 5000.3B 7.c.]
  - Any further degradation in the level of safety of the facility or other worsening conditions, including those that require the declaration of any of the Emergency action levels, if such a declaration has not been previously made;
  - Any change from one Emergency action level or category to another; or
  - Termination of an Emergency.
  - The 10-Day Occurrence Report must be updated when significant new information is available. [DOE Order 5000.3B 7.d.(3)]
  - For oral notification, the Facility Manager must simultaneously contact (1) the DOE Facility Representative and (2) the HQ Emergency Operations Center (EOC), through which the DOE Program Manager and any other necessary program staff can be located and direct communication links with the Facility Manager be established. The Facility Manager may use the local Field/Site EOC to expedite establishing the direct communication link. [DOE Order 5000.3B 8.a.(5)] (The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.)
  - If the original Occurrence was determined by an AC to be classified, the updated Occurrence Report may also be classified. Follow the same steps for updating the classified and sanitized reports as were followed in developing and distributing the original reports. See Step 30.
- Step 35 Did the change in the Occurrence require the Occurrence to be re-categorized? (See Step 34)
  - YES If the release has been re-categorized, proceed to Step 36 for guidance on additional requirements applicable to re-categorized releases.
  - NO If the release has not been re-categorized, proceed to Step 37.

- Step 36 The Manager or Administrator of each DOE- or contractor-operated facility must accomplish the following:
  - Concurrently notify the HQ EOC and the Field Element of all changes in the Emergency class within 15 minutes of the redesignation; [DOE Order 5500.2B 12.b.(2)(b)] and
  - Follow the appropriate procedures for the new category or class of Occurrence.

#### Proceed to Step 2.

- Step 37 The Facility Manager must prepare and distribute the 10-day Occurrence Report to the following:
  - The Program Manager;
  - The affected program self-assessment group;
  - All Program Secretarial Officers (PSOs);
  - The Heads of all Field Organizations;
  - The DOE Facility Representative;
  - The Office of Environmental Safety and Health (EH-1);
  - All DOE Management and Operations (M&O) contractors; and
  - The Office of Nuclear Safety Policy and Standards (EH-60).

**Note:** The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.

When unclassified Occurrence Reports (10-Day and Final) are entered onto the DOE ORPS data base by the Facility Manager, the distribution requirement is automatically satisfied. [DOE Order 5000.3B 8.b.(6)]

Note: The Facility Representative, in consultation with the DOE Program Manager, should provide the Facility Manager his or her assessment of the Occurrence, initial and proposed corrective actions, follow-up of the contractor, and any other actions DOE has taken since the Occurrence, in a timely manner, for inclusion

in the Occurrence Report. If the computerized DOE ORPS data base is being used, the Facility Representative's comments should be provided via the data base. [DOE Order 5000.3B 8.b.(3)]

Note: The Office of Environment, Safety, and Health (EH-1) shall maintain an unclassified central DOE operational data base, the Occurrence Reporting and Processing System (ORPS), to contain all unclassified Occurrence Reports to be entered by the Facility Manager. The Occurrence Report documentation and distribution requirements may be satisfied by utilization of the ORPS, with the exception of those Occurrence Reports containing classified information. The information in the data base is available to all Departmental Elements and DOE operating contractors.

[DOE Order 5000.3B 8.c.(1)]

Contractors must maintain the ORPS data base up-to-date on the status of Final Occurrence Report corrective actions. Status reports of all incomplete Occurrence Reports (not final) and incomplete corrective actions are available at any time from the ORPS data base.

[DOE Order 5000.3B 8.b.(9)]

- The Facility Manager must submit an Occurrence Report within 10 working days of categorization. The 10-day report must include any updated information provided by the DOE Facility Representative. Complete information should be available at that time for the majority of Reportable Occurrences. [DOE Order 5000.3B 8.b.(2)]
- The Final Occurrence Report must be prepared by the Facility Manager and submitted when the analysis of the Occurrence has been completed, root cause(s) and contributing cause(s) finalized, corrective action(s) determined and scheduled, and lessons-learned identified. This report must be submitted to the DOE Facility Representative within 45 days of categorization of the Occurrence. [DOE Order 5000.3B 8.b.(4)]
- The Final Occurrence Report shall be reviewed and approved by the DOE Facility Representative within seven working days of receipt and forwarded to the Program Manager for approval, when the information required is provided. The Program Manager must review and approve the Final Occurrence Report with 14 days of receipt. The Program Manager should provide comments on the final report at this time. The Program Manager's comments are not mandatory. If the final Occurrence Report is not approved, then the report must be returned to the Facility Manager with an explanation. The revised Final Occurrence Report must be resubmitted within 21 days of disapproval. [DOE Order 5000.3B 8.b.(5)]

- The Facility Manager must distribute the Final Occurrence Report to the following:
  - The Program Manager;
  - The affected program self-assessment group;
  - All PSOs;
  - The Heads of all Field Organizations;
  - The DOE Facility Representative;
  - The Office of Nuclear Safety (NS-1);
  - The Office of Environmental Safety and Health (EH-1);
  - All DOE Management and Operations (M&O) contractors; and
  - The Office of Nuclear Safety Policy and Standards (EH-60). <sup>2</sup>

When unclassified Occurrence Reports (10-day and final) are entered onto the DOE ORPS data base, the distribution requirement is automatically satisfied. [DOE Order 5000.3B 8.b.(6)]

<sup>&</sup>lt;sup>2</sup> DOE Order 5000.3B 8.b.(6) specifically refers to NE-70; however, the Office of Nuclear Safety Policy and Standards has become EH-60.

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Table 1: Categorization of Occurrences (DOE Order 5000.3B Attachment I) - Selected Examples

Occurrences Affecting:	Emergency	Unusual	Off-Normal
Nuclear Criticality Safety	Nuclear criticality achieved in a system not intended to reach criticality that results or could result in actual or potential facility damage or releases of radioactive material.	Any actuation of a Nuclear Incident Monitor (NIM) or Criticality Accident Alarm system not due to approved testing.  Violation of the double contingency criticality specifications.	Any nuclear criticality safety violation or infraction of procedures not covered by other definitions (e.g., violation of one contingency).
Fires and Explosions	Any Occurrence that causes uncontrolled release of radioactive or hazardous material to the environment that could result in significant off-site consequences.  Any Occurrence not under control causing more than minor damage to confinement systems, loss of building integrity, or multiple facilities.	Any Occurrence that threatens failure or degrades performance of Class A Equipment.  Any Occurrence that activates a fire suppression system, except under approved testing.  Any Occurrence within primary confinement or containment boundaries of a nuclear facility.	Any fire that threatens failure or degrades performance of Class B Equipment.  Any unplanned fire within a facility that takes longer than 10 minutes to extinguish following the arrival of fire protection personnel.
Operations	Loss of any primary confinement/ containment that results in uncontrolled hazardous material or energy release.	Any actuation of safety systems, automatic protection systems, emergency systems, or engineered safety features, except under approved testing.	Any actuation of systems designed, installed, and operated for the protection of facility or co-located facility workers (e.g., fire protection systems, radiation monitoring systems), except under approved testing.

Table 1: Categorization of Occurrences (Cont'd)

Occurrences Affecting:	Emergency	Unusual	Off-Normal
Radionuclide Releases	Any release of radionuclides in concentrations that, if averaged over 24 hours, would exceed five times the respective RQ.	Release of a radionuclide that exceeds a federally permitted level by the amount of an RQ, or where no federally permitted release exists and the release exceeds the RQ.  Release of radionuclide that violates environmental requirements in Federal permits, regulations, or DOE standards.  Release below Emergency levels that requires immediate (<4 hours) reporting to Federal regulatory authorities or triggers specific action levels for an outside Federal agency.	Any radionuclide release that is not part of a normal monitored release and that exceeds 50 percent of a CERCLA RQ.  Any controlled radionuclide release that occurs as a monitored part of normal operations and that exceeds what analysis of historical data show is expected during normal operations.  Any detection of a radionuclide where such material is not expected.  Any release that will be reported in writing to State and local agencies in a format other than routine monthly or quarterly reports.

Table 1: Categorization of Occurrences (Cont'd)

Occurrences Affecting:	Emergency	Unusual	Off-Normal
Release of Hazardous Substances, Regulated Pollutants, and Oil	Any actual or potential release to the environment that results in or could result in significant off-site consequences.  Any release of hazardous substances or regulated pollutants in concentrations that exceed five times their RQ.	Any hazardous substance or regulated pollutant that exceeds an RQ, or exceeds a federally permitted release by the amount of an RQ.  Release of a hazardous substance, regulated pollutant, or oil that violates environmental requirements in Federal permits or regulations, or DOE standards.  Release below Emergency levels that requires immediate (<4 hours) reporting to Federal agencies or triggers specific action levels for an outside Federal agency.  Any release of 100 gallons or more of oil.	Release of a hazardous substance or regulated pollutant that is not part of a normal, monitored release and that exceeds 50 percent of an RQ.  Any release of oil less than 100 gallons but greater than 10 gallons.  Any detection of a toxic or hazardous substance where such material is not expected.  Any release that is an Unusual Occurrence, but will be reported in writing to State/local agencies in a format other than routine reports.  Any controlled release that occurs as a monitored part of normal operations and that exceeds what analysis of historical data shows is expected.
Discovery of Radioactive or Hazardous Material Contamination Due to DOE Operations	Discovery of contamination that results or could result in significant consequences.  Discovery of hazardous substance contamination in concentrations that exceed five times the RQ.	Discovery of contamination that does not represent an immediate threat to the public, but that exceeds an RQ.  Any discovery of groundwater contamination that is not part of an existing plume previously identified in either an annual report or in any CERCLA or RCRA activity or report.	Discovery of on-site contamination that exceeds 50 percent of an RQ.

Table 1: Categorization of Occurrences (Cont'd)

Occurrences Affecting:	Emergency	Unusual	Off-Normal
Ecological Resources		Any Occurrence causing significant impact to any ecological resource for which DOE is a trustee.	
Transportation	An off-site transportation event involving the release of an RQ of a hazardous substance that is transported in support of Departmental operations.	Any on-site transportation event involving the release of an RQ of a hazardous substance.  A transportation event involving the release of hazardous material, other than radionuclides, in an amount greater than a "limited quantity" (per 49 CFR 171.8).  An off-site transportation event involving the release of radionuclides.  An on-site transportation event involving the release of radionuclides greater than an "excepted quantity" (per 49 CFR 173).  Any radioactive shipment transported off-site that arrives at its destination with radiation or contamination levels in excess of DOT allowable limits.  Any shipment of radioactive material or hazardous waste that arrives at its destination with a non-reconcilable shipping paper discrepancy or with an unaccounted-for package.	A transportation event involving a release of hazardous material, other than radioactive material, not exceeding a limited quantity.  Any other violation of regulatory requirements involving improper material descriptions, marking, labeling, placarding, routing, or separation/segregation of hazardous materials that could or does result in the following:  Improper handling or storage, Personnel exposures higher than permitted, or Emergency response actions inconsistent with the actual hazard.  Any transportation event involving Departmental property resulting in vehicular or aircraft damage of more than \$5,000.

Table 2: Classification of Operational Emergencies (DOE Order 5500.2B)

Emergencies Affecting:	General Emergency	Site-Area Emergency	Alert
Reactors	A General Emergency must be declared when events are in progress or have occurred that involve actual or imminent catastrophic core degradation or melting with potential for loss of containment or confinement integrity (e.g., release of large quantities of fission products to the environs) and/or release of radioactive material that can reasonably be expected to exceed PAG exposure levels off-site.	A Site-area Emergency must be declared when events are in progress or have occurred that involve actual or potential major failures of plant functions necessary for protection of workers and the public. Any release of radioactive materials expected to exceed PAG exposure levels on-site but not expected to exceed PAGs off-site is classified as a Site-area Emergency.	An Alert must be declared when events are in progress or have occurred that involve an actual or potential substantial degradation of the level of safety of the reactor. During an Alert, any release of radioactive materials to the environment is expected to be limited to small fractions of the PAG exposure levels.
Non-Reactor Facilities	A General Emergency must be declared when events are in progress or have occurred that involve actual or imminent catastrophic reduction of facility safety systems with potential for loss of containment or confinement integrity (e.g., release of large quantities of hazardous materials to the environs) and/or release of hazardous materials (radiological or non-radiological) that can reasonably be expected to exceed appropriate PAG or ERPG exposure levels off-site.	A Site-area Emergency must be declared when events are in progress of have occurred that involve actual or likely major failures of facility functions needed for protection of workers and the public. Any release of hazardous materials (radiological or non-radiological) expected to exceed appropriate PAG or ERPG exposure levels on-site but not expected to exceed the appropriate PAGs or ERPGs off-site is classified as a Site-area Emergency.	An Alert must be declared when events are in progress or have occurred that involve an actual or potential substantial degradation of the level of safety of the facility. During an Alert, any release of hazardous materials (radiological) is expected to be limited to small fractions of the appropriate PAG or ERPG exposure levels.

Table 2: Classification of Operational Emergencies (cont'd)

Emergencies Affecting:	General Eme.gency	Site-Area Emergency	Alert
Nuclear Weapons, Components, or Test Devices	A General Emergency must be declared when events are in progress or have occurred that involve actual or likely catastrophic failures in safety or security systems threatening the integrity of the weapon, component, or test device or placing the general public at risk to releases of radiological materials that can reasonably be expected to exceed PAG exposure levels. (This class of Emergency is also applicable to DOE in the event of an accident or incident involving a DOD nuclear weapon component. Such events are categorized by DOD as a "Broken Arrow." Events categorized by DOD as a "Bent Spear" are typically similar to events categorized by DOE as an "Alert." Events categorized by DOE as a "Dull Sword" are categorized and handled by DOE according to the procedures established by DOE Order 5000.3A for an "Unusual Occurrence.")	A Site-area Emergency must be declared when events are in progress or have occurred that involve actual or potential safety or security system failures that threaten the integrity of the unit and may adversely impact the safety and health of the workers in the immediate area, but not personnel in a general public area.	An Alert must be declared when events are in progress or have occurred that involve an actual of potential substantial degradation of the level of safety of the weapon, component, or test device. The degradation would not involve an immediate threat to the facility or to the general public.

Table 2: Classification of Operational Emergencies (cont'd)

Emergencies Affecting:	General Emergency	Site-Area Emergency	Alert
Safeguards and Security	A General Emergency must be declared when events are in progress or have occurred that involve malevolent action resulting in catastrophic degradation of protection systems that could lead to substantial off-site impacts.	A Site-area Emergency must be declared when events are in progress or have occurred that involve actual malevolent acts resulting in major failures of protective systems.	An Alert must be declared when events are in progress, have occurred, or are anticipated that could involve an actual or potential substantial degradation in the level of protection of the facility or the loss or possible loss of Special Nuclear Material (SNM). Pre-emergency conditions that warrant increased safeguards and security measures must be reported in accordance with DOE Order 5000.3A, Attachment 2, Group 5, Procedures for Non-emergency Occurrences.
Transportation	A General Emergency must be declared when events have occurred that involve an actual or imminent catastrophic reduction in the safety of the shipment. Any release of hazardous materials (radiological or non-radiological) expected to exceed appropriate PAG or ERPG exposure levels in a general public area, or if the event has occurred on a DOE site, the release is expected to exceed appropriate PAG or ERPG exposure levels offsite, is classified as a General Emergency.	A Site-area Emergency must be declared when events are in progress or have occurred that involve an actual or potential major reduction in the safety of the shipment. Any release of hazardous materials (radiological or non-radiological) expected to exceed appropriate PAG or ERPG exposure levels in the immediate vicinity of the accident or incident but not expected to exceed the appropriate PAGs or ERPGs in a general public area is classified as a Site-area Emergency.	An Alert must be declared when events are in progress or have occurred that involve an actual or potential substantial degradation of the safety of the shipment.  During an Alert, any release of hazardous materials (radiological or non-radiological) is expected to be limited to small fractions of the appropriate PAG or ERPG exposure levels.

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## APPENDIX I

List of CERCLA Hazardous Substances and Reportable Quantities

40 CFR 302.4 Table 302.4 (as of November, 1993)

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## APPENDIX I - List of CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4 Table 302.4)

			Statutory			Final RQ		
Hazardous Substance	CASRN	Regulatory Synonyms	RQ Code+		RCRA Waste No.	C A T.	Pounds (Kg)	
Acenaphthene	83329		1*	2		В	100 (45.4)	
Acenaphthylene	208968		1*	2		D	5000 (2270)	
Acetal dehyde	75070	Ethanal	1000	1,4	U001	С	1000 (454)	
Acetaldehyde, chloro-	107200	Chloroacetaldehyde	1*	4	P023	C	1000 (454)	
Acetaldehyde, trichloro-	<b>75876</b>	Chloral	1*	4	U034	В	5000 (2270)	
Acetamide, N- (aminothioxomethyl)-	591082	1-Acetyl-2-thiourea	1*	4	P002	C	1000 (454)	
Acetamide,N- (4-ethoxyphenyl)-	62442	Phenacetin	1*	4	U187	В	100 (45.4)	
Acetamide, 2-fluoro-	640197	Fluoroacetamide	1*	4	P057	В	100 (45.4)	
Acetamide, N-9H-fluoren-2-yl-	53963	2-Acetylaminofluorene	1*	4	U005	X	1 (0.454)	
Acetic acid	64197		1000	1.		D	5000 (2270)	
Acetic acid (2,4-	94757	2,4-D Acid	100	1,4	U240	8	100 (45.4)	
dichlorophenoxy)-	7040/0	2, 4-D, saits and esters	F000		11477		40 4/ 5/	
Acetic acid, lead(2+) salt Acetic acid, thallium (1+) salt	301042 563688	Lead acetate Thallium(I) acetate	5000 1*	1,4	U144 U214	A B	10 (4.54) 100 (45.4)	
Acetic acid, (2,4,5- trichlorophenoxy)	93765	2,4,5-T 2,4,5-T acid	100	1,4	u232	С	1000 (454)	
Acetic acid, ethyl ester	141786	Ethyl acetate	1*	4	U112	D	5000 (2270)	
Acetic acid, fluoro-, sodium salt	62748	Flouracetic acid, sodium salt	1*	4	P058	Ā	10 (4.54)	
Acetic anhydride	108247		1000	1		D	5000 (2270)	
Acetone	67641	2-Propanone	1*	4	U002	D	5000 (2270)	
Acetone cyanohydrin	75865	Propanenitrile, 2- hydroxy-2-methyl- 2-Methyllactonitrile	10	1,4	P069	A	10 (4.54)	
Acetonitrile	75058		1*	4	U003	D	5000 (2270)	
Acetophenone	98862	Ethanone, 1-phenyl-	1*	4	U004	D	5000 (2270)	
2-Acetylaminofluorene	53963	Acetamide, N-9H- fluoren-2-yl-	1*	4	u005	X	1 (0.454)	
Acetyl bromide	506967		5000	1 .		D	5000 (2270)	
Acetyl chloride 1-Acetyl-2-thiourea	75365 591082	Acetamide, N-(aminoth	5000 1*	1,4 4	U006 P002	D C	5000 (2270) 1000 (454)	
		ioxomethyl)-						
Acrolein	107028	2-Propenal	1	1,2,4	P003	X	1 (0.454)	
Acrylamide	79061	2-Propenamide	1*	4	U007	D	5000 (2270)	
Acrylic acid	79107 107131	2-Propenoic acid	1* 100	4 1,2,4	U008 U009	D B	5000 (2270) 100 (45.4)	
Acrylonitrile Adipic acid	124049	2-Propenenitrile	5000	1,2,4	0009	Ď	5000 (2270)	
Aldicarb	116063	Propanal, 2-methyl-2- (methylthio)-,0- [(methylamino)	1*	4	P070	x	1 (0.454)	
Aldrin	309002	carbonyl]oxime. 1,4,5,8-Dimethano- naphthalene, 1,2,3, 4,10,10-10-hexachloro- 1,4,4a,5,8,8a-hexahydro-	1	1,2,4	P004	X	1 (0.454)	
		(1aipha,4aipha,4abeta,						
		Salpha, Balpha, Babeta)-	100	1 /	P005	В	100 (45.4)	
Allyl alcohol	107186	2-Propen-1-ol	100 1000	1,4 1	7003	C	1000 (45.4)	
Allyl chloride	107051		1*	4	P006	8	100 (45.4)	
Aluminum phosphide	20859738 10043013		5000	i	, 500	Ď	5000 (2270)	
Aluminum sulfate 5-(Aminomethyl)-3- isoxazolol.	2763964	Muscimol 3(2H)-Iso- xazolone, 5-(amino- methyl)-	1*	4	P007	C	1000 (454)	
4-Aminopyridine	504245	4-Pyridinamine	1*	4	P008	C	1000 (454)	
Amitrole	61825	1H-1,2,4-Triazol-3-amine	1*	4	U011	A	10 (4.54)	
Ammonia	7664417		100	1		B D	100 (45.4) 5000 (2270)	
Ammonium acetate	631618		5000	1		ט ם	5000 (2270)	
Ammonium benzoate	1863634		5000	1		ט ס	5000 (2270)	
Ammonium bicarbonate	1066337		5000 1000	1		A	10 (4.54)	
Ammonium bichromate	7789095		5000	i		B	100 (45.4)	
Ammonium bifluoride	1341497		5000	i		Ď	5000 (2270)	
Ammonium bisulfite	10192300		2000	•		-	,	

## Appendix I - (continued)

				I. I			
mmonium carbamate	1111780		5000	1		D	5000 (2270)
mmonium carbonate	506876		5000	1		D	5000 (2270)
mmonium chloride	12125029		5000	1		D	5000 (2270)
mmonium chromate	7788989		1000	1		A	10 (4.54)
mmonium citrate, dibasic	3012655		5000	1		D	5000 (2270)
mmonium fluoborate	13826830		5000	1		D	5000 (2270)
mmonium fluoride	12125018		5000	1		8	100 (45.4)
mmonium hydroxide	1336216		1000	1		C	1000 (454)
mmonium oxalate	6009707		5000	1		D	5000 (2270)
	5972736						
	14258492	Dhamal D. / d. animiana	4.	,	0000		40 4/ 5/5
mmonium picrate	131748	Phenol, 2,4,6-, trinitro-,	1*	4	P009	A	10 (4.54)
	44040400	ammonium salt	4000			•	1000 4/5/5
mmonium silicofluoride	16919190		1000	1		C	1000 (454)
mmonium sulfamate	7773060		5000	1		D	5000 (2270)
mmonium sulfide	12135761		5000	1		В	100 (45.4)
mmonium sulfite	10196040		5000	1		D	5000 (2270)
mmonium tartrate	14307438		5000	1		D	5000 (2270)
	3164292			_		_	
mmonium thiocyanate	1762954		5000	1		D	5000 (2270)
mmonium vanadate	7803556	Vanadic acid, ammonium	1*	4	P119	C	1000 (454)
		salt					
myl acetate	628637		1000	1		D	5000 (2270)
iso-	123922						
sec-	626380						
tert-	625161	_					
niline	62533	Benzenamine	1000	1,4	U012	D	5000 (2270)
nthracene	120127		1*	2		D	5000 (2270)
Intimony #	7440360		1*	2		D	5000 (2270)
INTIMONY AND COMPOUNDS	N.A.		1*	2			**
Intimony pentachloride	7647189		1000	1		C	1000 (454)
ntimony potassium	28300745		1000	1		8	100 (45.4)
tartrate							
ntimony tribromide	7789619		1000	1		C	1000 (454)
ntimony trichloride	10025919		1000	i		Č	1000 (454)
•							
ntimony trifluoride	7783564		1000	1		C	1000 (454)
ntimony trioxide	1309644		5000	1		C	1000 (454)
rgentate(1-), bis	506616	Potassium silver cyanide	1*	4	P0 <b>99</b>	X	1 (0.454)
(cyano-C)-, potassium	4545444		4.0				
roctor 1016	12674112	POLYCHLORINATED	10	1,2		X	1 (0.454)
		BIPHENYLS (PCBs)					
roclor 1221	11104282	POLYCHLORINATED	10	1,2		X	1 (0.454)
		BIPHENYLS (PCBs)					
roctor 1232	11141165	POLYCHLORINATED	10	1,2		X	1 (0.454)
		BIPHENYLS (PCBs)					
roctor 1242	53469219	POLYCHLORINATED	10	1,2		X	1 (0.454)
		BIPHENYLS (PCBs)					
roclor 1248	12672296	POLYCHLORINATED	10	1,2		X	1 (0.454)
		BIPHENYLS (PCBs)					
roctor 1254	11097691	POLYCHLORINATED	10	1,2		X	1 (0.454)
		BIPHENYLS (PCBs)		•			
roclor 1260	11096825	POLYCHLORINATED	10	1,2		X	1 (0.454)
		BIPHENYLS (PCBs)					
rsenic ++	7440382		1*	2,3		X	1 (0.454)
rsenic acid	1327522	Arsenic acid H3AsO4	1*	4	P010	X	1 (0.454)
	7778394						
rsenic acid H3AsO4	1327522	Arsenic acid	1*	4	P010	X	1 (0.454)
	7778394			•		.,	, (01151)
disellic acid lisason				2			**
			7 =			v	
ARSENIC AND COMPOUNDS	N.A.		1* 5000				1 (0 (54)
ARSENIC AND COMPOUNDS Arsenic disulfide	N.A. 1303328	Argenic triovide	5000	1	2012	X	
ARSENIC AND COMPOUNDS Arsenic disulfide Arsenic oxide As203	N.A. 1303328 1327533	Arsenic trioxide	5000 5000	1 1,4	P012	X	1 (0.454)
ARSENIC AND COMPOUNDS Arsenic disulfide Arsenic oxide As203 Arsenic oxide As205	N.A. 1303328 1327533 1303282	Arsenic pentoxide	5000 5000 5000	1 1,4 1,4	P011	X	1 (0.454) 1 (0.454)
ARSENIC AND COMPOUNDS Arsenic disulfide Arsenic oxide As203 Arsenic oxide As205 Arsenic pentoxide	N.A. 1303328 1327533 1303282 1303282		5000 5000 5000 5000	1 1,4 1,4 1,4		X X X	1 (0.454) 1 (0.454) 1 (0.454)
ARSENIC AND COMPOUNDS Arsenic disulfide Arsenic oxide As203 Arsenic oxide As205 Arsenic pentoxide Arsenic trichloride	N.A. 1303328 1327533 1303282 1303282 '784341	Arsenic pentoxide Arsenic oxide As205	5000 5000 5000 5000 5000	1 1,4 1,4 1,4	P011 P011	X X X X	1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454)
ARSENIC AND COMPOUNDS Arsenic disulfide Arsenic oxide As203 Arsenic pentoxide Arsenic trichloride Arsenic trichloride	N.A. 1303328 1327533 1303282 1303282 '784341 1327533	Arsenic pentoxide	5000 5000 5000 5000 5000 5000	1 1,4 1,4 1,4 1	P011	X X X X	1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454)
ARSENIC AND COMPOUNDS Arsenic disulfide Arsenic oxide As203 Arsenic oxide As205 Arsenic pentoxide Arsenic trichloride Arsenic trioxide Arsenic trioxide	N.A. 1303328 1327533 1303282 1303282 '784341 1327533 1303339	Arsenic pentoxide Arsenic oxide As205 Arsenic oxide As203	5000 5000 5000 5000 5000 5000 5000	1 1,4 1,4 1,4 1	P011 P011 P012	X X X X	1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454)
ARSENIC AND COMPOUNDS Arsenic disulfide Arsenic oxide As203 Arsenic oxide As205 Arsenic pentoxide Arsenic trichloride Arsenic trioxide Arsenic trisulfide Arsenic, diethyl-	N.A. 1303328 1327533 1303282 1303282 '784341 1327533 1303339 692422	Arsenic pentoxide Arsenic oxide As205 Arsenic oxide As203 Diethylarsine	5000 5000 5000 5000 5000 5000 5000	1 1,4 1,4 1,4 1 1,4	P011 P011 P012 P038	X X X X X	1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454)
ARSENIC AND COMPOUNDS Arsenic disulfide Arsenic oxide As203 Arsenic pentoxide Arsenic trichloride Arsenic trioxide Arsenic trioxide Arsenic trisulfide Arsine, diethyl- Arsinic acid, dimethyl-	N.A. 1303328 1327533 1303282 1303282 '784341 1327533 1303339 692422 75605	Arsenic pentoxide Arsenic oxide As205  Arsenic oxide As203  Diethylarsine Cacodylic acid	5000 5000 5000 5000 5000 5000 1*	1 1,4 1,4 1,4 1 1,4	P011 P011 P012 P038 U136	X X X X X X	1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454)
ARSENIC AND COMPOUNDS Arsenic disulfide Arsenic oxide As203 Arsenic pentoxide Arsenic trichloride Arsenic trioxide Arsenic trisulfide Arsine, diethyl- Arsinic acid, dimethyl- Arsonous dichloride,	N.A. 1303328 1327533 1303282 1303282 '784341 1327533 1303339 692422	Arsenic pentoxide Arsenic oxide As205 Arsenic oxide As203 Diethylarsine	5000 5000 5000 5000 5000 5000 5000	1 1,4 1,4 1,4 1 1,4	P011 P011 P012 P038	X X X X X	1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454)
ARSENIC AND COMPOUNDS Arsenic disulfide Arsenic oxide As203 Arsenic pentoxide Arsenic trichloride Arsenic trioxide Arsenic trioxide Arsenic trisulfide Arsine, diethyl- Arsinic acid, dimethyl- Arsonous dichloride, phenyl-	N.A. 1303328 1327533 1303282 1303282 '784341 1327533 1303339 692422 75605 696286	Arsenic pentoxide Arsenic oxide As205  Arsenic oxide As203  Diethylarsine Cacodylic acid	5000 5000 5000 5000 5000 5000 1*	1 1,4 1,4 1,4 1 1,4 1 4	P011 P011 P012 P038 U136	X X X X X X X	1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454)
RSENIC AND COMPOUNDS ursenic disulfide ursenic oxide As203 ursenic pentoxide ursenic trichloride ursenic trioxide ursenic trisulfide ursine, diethyl- ursinic acid, dimethyl- ursonous dichloride, uphenyl- usbestos ###	N.A. 1303328 1327533 1303282 1303282 '784341 1327533 1303339 692422 75605 696286	Arsenic pentoxide Arsenic oxide As205 Arsenic oxide As203 Diethylarsine Cacodylic acid Dichlorophenylarsine	5000 5000 5000 5000 5000 5000 1* 1*	1 1,4 1,4 1,4 1 1,4	P011 P011 P012 P038 U136 P036	X X X X X X X	1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454)
RSENIC AND COMPOUNDS rsenic disulfide rsenic oxide As203 rsenic pentoxide rsenic trichloride rsenic trickloride rsenic trisulfide rsenic trisulfide rsinic acid, dimethyl- rsonous dichloride, phenyl- sbestos +++	N.A. 1303328 1327533 1303282 1303282 '784341 1327533 1303339 692422 75605 696286	Arsenic pentoxide Arsenic oxide As205  Arsenic oxide As203  Diethylarsine Cacodylic acid Dichlorophenylarsine  Benzenamine,	5000 5000 5000 5000 5000 5000 1*	1 1,4 1,4 1,4 1 1,4 1 4	P011 P011 P012 P038 U136	X X X X X X X	1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454)
RSENIC AND COMPOUNDS ursenic disulfide ursenic oxide As203 ursenic pentoxide ursenic trichloride ursenic trioxide ursenic trisulfide ursine, diethyl- ursinic acid, dimethyl- ursonous dichloride, uphenyl- usbestos ###	N.A. 1303328 1327533 1303282 1303282 '784341 1327533 1303339 692422 75605 696286	Arsenic pentoxide Arsenic oxide As205  Arsenic oxide As203  Diethylarsine Cacodylic acid Dichlorophenylarsine  Benzenamine, 4,41-carbonimidoylbis	5000 5000 5000 5000 5000 5000 1* 1*	1 1,4 1,4 1,4 1 1,4 1 4	P011 P011 P012 P038 U136 P036	X X X X X X X	1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454)
ARSENIC AND COMPOUNDS Arsenic disulfide Arsenic oxide As203 Arsenic pentoxide Arsenic trickloride Arsenic trioxide Arsenic trioxide Arsenic trioxide Arsenic disthyl- Arsinic acid, dimethyl- Arsinic acid, dimethyl- Arsonous dichloride, phenyl- Asbestos ###	N.A. 1303328 1327533 1303282 1303282 '784341 1327533 1303339 692422 75605 696286	Arsenic pentoxide Arsenic oxide As205  Arsenic oxide As203  Diethylarsine Cacodylic acid Dichlorophenylarsine  Benzenamine, 4,4'-carbonimidoylbis (N,N-dimethyl-	5000 5000 5000 5000 5000 5000 1* 1* 1*	1 1,4 1,4 1,4 1 1,4 1 4 4 4 4 2,3	P011 P011 P012 P038 U136 P036	X X X X X X X X X	1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454)
ARSENIC AND COMPOUNDS Arsenic disulfide Arsenic oxide As203 Arsenic pentoxide Arsenic trickloride Arsenic trioxide Arsenic trioxide Arsenic trioxide Arsenic disthyl- Arsinic acid, dimethyl- Arsinic acid, dimethyl- Arsonous dichloride, phenyl- Asbestos ###	N.A. 1303328 1327533 1303282 1303282 '784341 1327533 1303339 692422 75605 696286	Arsenic pentoxide Arsenic oxide As205  Arsenic oxide As203  Diethylarsine Cacodylic acid Dichlorophenylarsine  Benzenamine, 4,4'-carbonimidoylbis (N,N-dimethyl- L-Serine, diazoacetate	5000 5000 5000 5000 5000 5000 1* 1*	1 1,4 1,4 1,4 1 1,4 1 4	P011 P011 P012 P038 U136 P036	X X X X X X X	1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454)
ARSENIC AND COMPOUNDS Arsenic disulfide Arsenic oxide As203 Arsenic pentoxide Arsenic trichloride Arsenic trioxide Arsenic trioxide Arsenic trioxide Arsenic diethyl- Arsinic acid, dimethyl- Arsinic acid, dimethyl- Assestos ### Auramine	N.A. 1303328 1327533 1303282 1303282 1303282 1303339 692422 75605 696286 1332214 492808	Arsenic pentoxide Arsenic oxide As205  Arsenic oxide As203  Diethylarsine Cacodylic acid Dichlorophenylarsine  Benzenamine, 4,4'-carbonimidoylbis (N,N-dimethyl- L-Serine, diazoacetate (ester)	5000 5000 5000 5000 5000 5000 1* 1* 1*	1 1,4 1,4 1,4 1 1,4 4 4 4 4 4	P011 P012 P038 U136 P036 U014	X X X X X X X X X X	1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454)
ARSENIC AND COMPOUNDS Arsenic disulfide Arsenic oxide As203 Arsenic pentoxide Arsenic trichloride Arsenic trioxide Arsenic trioxide Arsenic trisulfide Arsinic diethyl- Arsinic acid, dimethyl- Arsonous dichloride,	N.A. 1303328 1327533 1303282 1303282 '784341 1327533 1303339 692422 75605 696286	Arsenic pentoxide Arsenic oxide As205  Arsenic oxide As203  Diethylarsine Cacodylic acid Dichlorophenylarsine  Benzenamine, 4,4'-carbonimidoylbis (N,N-dimethyl- L-Serine, diazoacetate	5000 5000 5000 5000 5000 5000 1* 1* 1*	1 1,4 1,4 1,4 1 1,4 1 4 4 4 4 2,3	P011 P011 P012 P038 U136 P036	X X X X X X X X X	1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454) 1 (0.454)

				Apper		( ,		<b>-</b>
Azirino[2',3':3,4] pyrrolo(1,2-a)indole	50077	Mitomycin C	1*	4	U010	A	10 (	4.54)
-4,7-dione,6-amino-8- [[(aminocarbonylooxy] methyl]- 1,1a,2,8,8a,8b- hexahydro-8a- methoxy-5-methyl-,[1aS-								
(laalpha,8beta,8aalpha,								
8balpha)]. Barium cyanide	542621		10	1,4	P013	A		4.54)
Benz[j] aceanthrylene,	56495	3-Methylcholanthrene	1*	4	U157	A	10 (	4.54)
1,2-dihydro-3-methyl-	225514		1*	4	U016	В	100	(45.4)
Benz[c]acridine Benzal chloride	98873	Benzene,	1*	4	U017	Ď	5000	
, strage of the		dichloromethyl-	4.4				5000 (	22701
<pre>Jenzamide, 3,5-   dichloro-N-(1,1-   dimethyl-2-propynyl)-</pre>	23950585	Pronamide	1*	4	U192	D	2000 (	(2210)
Benz (a) anthracene	56553	Benzo (a) anthracene	1*	2,4	U018	A	10	(4.54)
1,2-Benzanthracene	56553	1,2-Benzanthracene Benz (a) anthracene	1*	2,4	U018	A	10	(4.54)
Benz (a) anthracene,	57976	Benzo[a]anthracene 7,12-Dimethylbenz[a]	1*	4	U094	X	1	(0.454)
7,12-dimethyl-		anthracene	1000	4 /	U012	D	SOOO .	(2270)
Benzenamine Benzenamine, 4,4'-	62533 492808	Aniline Auramine	1000 1*	1,4 4	U012	В		(45.4)
carbonimidoylbis(N,N- dimethyl-	4,200	7. C.						
Benzenamine, 4-chloro-	106478 3165933	p-Chloroaniline 4-Chloro-o-toluidine,	1* 1*	4	P024 U049	C B		(45.4) (45.4)
Benzenamine, 4-chloro- 2-methyl-,hydrochloride Benzeamine, N,N-dimethyl-	60117	hydrochloride p-Dimethylaminoazo-	1*	4	u093	A		(4.54)
4-(phenylazo-)	0557/	benzene	1*	4	U328	В	100	(45.4)
Benzenamine, 2-methyl- Benzenamine, 4-methyl-	95534 106490	o-Toluidine p-Toluidine	1*	4	u353	В		(45.4)
Benzenamine, 4,4'-	101144	4,4'-Methylenebis (2-chloroaniline)	1*	4	U15 <b>8</b>	A	10	(4.54)
methylenebis(2-chloro- Benzenamine,	636215	o-Toluidine	1*	4	U222	8	100	(45.4)
2-methyl-,hydrochloride Benzenamine, 2-methyl-5-nitro	99558	hydrochloride 5-Nitro-o-toluidine	1*	4	U181	8	100	(4.54)
Benzenamine, 4-nitro-	100016	p-Nitroaniline	1*	4	P077	D		(2270)
Benzene	71432 510156	Chlorobenzilate	1000 1*	1,2,3,4	U109 U038	A		(4.54) (4.54)
Benzeneacetic acid, 4-chloro- alpha-(4-chlorophenyl) -alpha-hydroxy-,ethyl ester			·	•				
Benzene, 1-bromo-4-	101553	4-Bromophenyl phenyl ether	1*	2,4	U030	В	100	(45.4)
phenoxy- Benzenebutanoic acid, 4-[bis(2-chloroethyl)	305033	Chlorambucil	1*	4	U035	A	10	(4.54)
amino]- Benzene, chloro-	108907	Chlorobenzene	100	1,2,4	U037	В	100	(45.4)
Benzene, chloromethyl-	100447	Benzyl chloride	100	1,4	P028	8		(45.4)
Benzenediamin, ar-methyl-	95807 496720 823405	Touenediamine	1*	4	U221	A	10	(4.54)
1,2-Benzenedicarboxylic acid,	117840	Di-n-octyl phthalate	1*	2,4	U107	D	5000	(2270)
dioctyl ester 1,2-Benzenedicarboxylic acid, [bis(2-ethylhexyl)-ester	117817	Bis (2-ethylhexyl) phthalate	1*	2,4	U028	В	100	(45.4)
		Diethylhexyl phthalate	400	4.2.4	U069	A	10	(4.54)
1,2-Benzenedicarboxylic dibutyl ester	84742	Di-n-butyl phthalate Dibutyl phthalate n-Butyl phthalate	100	1,2,4	0009	^	10	(4.34,
1,2-Benzenedicarboxylic acid,	84662	Diethyl phthalate	1*	2,4	U088	С	1000	(454)
diethyl ester 1,2-Benzenedicarboxylic acid,	131113	Dimethyl phthalate	1*	2,4	u102	D	5000	(2270
dimethyl ester Benzene, 1,2-dichloro-	95501	o-Dichlorobenzene	100	1,2,4	U070	В	100	(45.4)
Benzene, 1,3-dichloro-	541731	1,2-Dichlorobenzene m-Dichlorobenzene	1*	2,4	u071	8	100	(45.4
Benzene, 1,4-dichloro-	106467	1,3-Dichlorobenzene p-Dichlorobenzene	100	1,2,4	U072	В	100	(45.4
	·-·	1,4-Dichlorobenzene		• •				
Benzene, 1,1'(2,2-	72548	DDD	1	1,2,4	U060.	X	1	(0.45

Appendix	I	-	(continued)

				5	Pomon		(+0	
Benzene, dichloromethyl-	98873	Senzal chloride	1* 1*	4	U017	D		(2270)
Benzene, 1,3-diiso- cyanatomethyl-	584849 91087	Toluene diisocyanate	1=	4	U223	8	100	(45.4)
enzene, dimethyl	26471625 1330207	Xylene (mixed)	1000	1,4	U239	С	1000	(454)
m-Benzene, dimethyl	108383	m-Xylene	,,,,,	.,.		•	,,,,,	
o-Benzene, dimethyl	95476	o-Xylene						
p-Benzene, dimethyl	106423	p-Xylene						
,3-Benzenediol	108463	Resorcinol	1000	1,4	u201	D	5000	(2270)
,2-Benzenediol, 4-	51434	Epinephrine	1*	4	P042	C	1000	(454)
[1-hydroxy-2-								
(methylamino)ethyl]- enzeneethanamine,	122098	alpha,alpha-Dimethyl	1*	4	P046	D	5000	(2270)
alpha, alpha-dimethyl-	440744	phenethylamine	44	• •			40	•
enzene, hexachloro-	118741	Hexachlorobenzene	1* 1000	2,4	U127	V		(4.54)
enzene, hexahydro-	110827 108952	Cyclohexane Phenol	1000	1,4 1,2,4	U056 U1 <b>88</b>	C C		(454) (454)
enzene, hydroxy- enzene, methyl-	108883	Toluene	1000	1,2,4	U220	Č	1 4 1 4	(454)
enzene, 2-methyl-1,3-dinitro-	606202	2,6-Dinitroltoluene	1000	1,2,4	U106	ě		(45.4)
enzene, 1-methyl-2,4-dinitro-	121142	2,4-Dinitrotoluene	1000	1,2,4	U105	Ă		(4.54)
enzene, 1-methylethyl-	98828	Cumene	1*	4	U055	Ď		(2270)
enzene, nitro-	98953	Nitrobenzene	1000	1,2,4	U169	Č		(454)
enzene, pentachloro-	608935	Pentachlorobenzene	1*	4	U183	Ä		(4.54)
enzene,	82688	Pentachloronitro-	1*	4	U185	В		(0.454
pentochloronitro-	98099	benzene (PCNB) Benzenesulfonyl chloride	1*	4	U020	8	100	(45.4)
enzenesulfonic acid chloride enzenesulfonyl chloride	98099	Benzenesulfonic acid	1*	4	U020	8		(45.4)
enzene, 1,2,4,5-	595943	chlorid <b>e</b> 1,2,4,5-	1*	4	U207	D	5000	(2270)
-tetrachloro-	2,2,42	Tetrachlorobenzene	•	•	020,	•	,,,,,	(==: -:
enzenethio	108985	Thiophenol	1*	4	P014	В	100	(45.4)
enzene, 1,1'-(2,2,2- tri-chloroethylidene)	50293	DDT 4,4'DDT	1	1,2,4	U061	X		(0.45
bis (4-chloro- enzene, 1,1'-(2,2,2-	72435	Methoxychlor	1	1,4	U247	x	1	(0.45
trichloroethylidene) bis (4-methoxy-	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		•	.,.	0541		•	(5.75
enzene, (trichloromethyl)-	98077	Benzotrichloride	1*	4	U023	A	10	(4.54)
enzene, 1,3,5-trinitro-	99354	1,3,5-Trinitrobenzene	1*	4	U234	A	10	(4.54
enzidine	92875	(1,1'-Biphenyl)- 4,4'diamine	i*	2,4	U021	x		(0.454
,2-Benzisothiazol-3(2H)-one,	81072	Saccharin and salts	1*	4	U202	8	100	(45.4
1,1-dioxide Benzo[a] anthracene	56553	Benz (a) anthracene 1,2-Benzanthracene	1*	2,4	U01 <b>8</b>	A	10	(4.54
lenzo(b) fluoranthene	205992	1,2-benzanthracene	1*	2		X	•	(0.45
lenzo(k) f luoranthene	207089		1*	2		Ď		(2270
enzo[j,k]fluorene	206440	fluoranthene	j•	2,4	U120	B		(45.4
,3-Benzodioxole, 5-)	120581	Isosafrole	j*	4'	U141	8		(45.4
1-propenyl)-  ,3-Benzodioxole, 5-  (2-propenyl)-	94597	Safrole	1*	4	U20 <b>3</b>	8	100	(45.4
,3-Benzodioxole, 5- propyl-	94586	Dihydrosafrole	1*	4	u0 <b>9</b> 0	A	10	(4.54
enzoic acid	65850		5000	1		D	5000	(2270
Jenzonitrile	100470		1000	1		D		(2270
lenzo (rst) pentaphene	189559	Dibenz(a,i)pyrene	1*	4	U064	A	10	(4.54
Benzo[ghi]perylene	191242		1*	2		D		(2270
H-1-Benzopyran-2-one, 4- hydroxy-3-(3-oxo-1-phenyl- butyl)-, & salts, when present at concentrations	81812	Warfarin, & salts,when present at concentrations greater than 0.3%	1*	4	P001	8	100	(45.5
greater than 0.3%								
lenzo (a) pyrene	50328	3,4-Benzopyrene	1*	2,4	U022	X	1	(0.45
,4-Benzopyrene	50328	Benzo (a) pyrene	1*	2,4	U022	X	1	(0.45
- Benzoquinone	106514	2,5-Cyclohexadiene- 1,4-dione	1*	4	U197	A	10	(4.54
Benzotrichloride	98077	Benzene, (trichloromethyl)-	1*	4	u023	A	10	(4.54
Benzoyl chloride	98884	•••	1000	1		C	1000	(454)
1,2-Benzphenanthrene	218019	Chrysene	1*	2,4	U050	8		(45.4
Benzyl chloride	100447	Benzene, chloromethyl-	100	1,4	P028	В		(45.4
Beryllium ++	7440417	Beryllium dust 🕂	1*	2,3,4	P015	A		(4.5
BERYLLIUM AND COMPOUNDS	N.A.		1*	2			**	
Beryllium chloride	7787475		5000	1		X		(0.45
Beryllium dust +	7440417	Beryllium 👭	1*	2,3,4	P015	A		(4.54
Beryllium fluoride	7787497		5000	1		X	1	(0.4

Beryllium nitrate	13597994		5000	1		x	1	(4.54)
alpha - BHC	7787555 319846		1*	2			10	//E /s
oeta - BHC	319857		10	ž		A X		(45.4) (0.454
ielta - BHC	319868		j*	Š		Ŷ		(0.454
amma - BHC	58899	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1elpha,2alpha,3beta, 4alpha,5alpha,6beta)- Hexachlorocyclohexane (gamma isomer) Lindane	1	1,2,4	U129	x		(0.454
2,2 <sup>1</sup> -Bioxirane	1464535	1,2:3,4-Diepoxybutane	1*	4	U085	A	10	(45.4)
(1,1-'Biphenyi)-4,4'diamine	92875	Benzidine	1*	2,4	U021	X		(0.454
[1,1'-Biphenyl]-	91941	3,3'-Dichlorobenzidine	1*	2,4	U073	X		(0.454
4,4'diamine,3,3'dichloro- (1,1'-Biphenyl]-4,4'-diamine, 3,3'dimethoxy-	119904	3,31-Dimethoxybenzidine	1*	4	U091	8	100	(45.4)
[1,1'Biphenyl]-4,4'-diamine, 3,3'-dimethyl-	119937	3,3'-Dimethylbenzidine	1*	4	U095	A	10	(4.54)
Bis(2-chloroethyl) ether	111444	Dichloroethyl ether Ethane, 1,1'- oxybis [2-chloro-	1*	2,4	U025	A	10	(4.54)
Bis(2-chloroethoxy) methane	111911	Dichloromethoxy ethane Ethane, 1,1'-(methylenebis (oxy)]bis(2-chloro-	1*	2,4	U024	C	1000	(454)
Bis (2-ethylhexyl) phthalate	117817	Diethylhexyl phthalate 1,2-Benzenedicarboxylic acid, [bis(2-ethylhexyl)] ester	1*	2,4	U028	8	100	(45.4)
Bromoaceton <del>e</del>	598312	2-Propanone, 1-bromo-	1*	4	P017	C	1000	(454)
Bromoform	75252	Methane, tribromo-	1*	2,4	U225	8	100	(45.4)
4-Bromophenyl phenyl ether	101553	Benzene, 1-bromo-4- phenoxy-	1*	2,4	U030	8	100	(45.4)
Brucine	357573	Strychnidin-10-one, 2,3-dimethoxy-	1*	4	P018	8	100	(45.4)
1,3-Butadiene,1,1,2,3,4,4- hexachioro-	87683	Hexachlorobutadiene	1*	2,4	U128	X		(0.454
I-Butanamine, N-butyl-N- nitroso-	924163	N-Nitrosodi-n-butylamine	1*	4	U172	A		(4.54)
1-Butanol 2-Butanone	71363 78933	n-Butyl alcohol	1*	4	U031	D		(2270)
2-Butanone peroxide	1338234	Hethyl ethyl ketone (MEK)  Methyl ethyl ketone  peroxide	1*	4	u159 u160	D A		(2270) (4.54)
2-Butanone, 3,3-dimethyl-1- (methylthio)-,0[(methyl- amino)carbonyl]oxime.	39196184	Thiofanox	1*	4	P045	8	100	(45.4)
2-Butenal	123739 4170303	Crotonal dehyde	100	1,4	U053	8	100	(45.4)
2-Butene,1,4-dichloro- 2-Butenoic acid, 2-methyl-, 7[[2,3-dihydroxy-2-(1- methoxyethyl)-3-methyl- 1-oxobutoxy]methyl]- 2,3,5,7a-tetrahydro-1H- pyrrolizin-1-yl ester, [1S-[1alpha(Z), 7(2S*,	764410 303344	1,4-Dichloro-2-butene Lasiocarpine	1*	4	U074 U143	X A		(0.454 (4.54)
3R*),7ami;ha]]- sutyl acetate iso- sec- tert-	123864 110190 105464 540885		5000	1		D	5000	(2270)
n-Butyl alcohol	71363	1-Butanol	1*	4	U031	D	SOOO	(2270)
Butylamine	109739		1000	i	0031	Č		(454)
iso- sec- sec-	78819 513495 13952846							•
tert- Butyl benzyl phthalate	75649 85687		1*	2			400	,,e ,-
• •						В	100	(45.4)
n-Butyl phthalate	84742	Di-n-butyl phthalate Dibutyl phthalate 1,2-Benzenedicarboxylic acid, dibutyl ester	100	1,2,4	U069	<b>A</b>	10	(4.54)
Butyric acid iso-Butyric acid	107926 79312		5000	1		D	5000	(2270)
acodylic acid	75605	Arsinic acid, dimethyl-	1*	4	U136	x	1	(0.454
Cadmium +	7440439	,	1*	2		Ä		(4.54)
Cadmium acetate	543908		100	1		A	10	(4.54)

Appendix	I - (	(conti	inued
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CADMIUM AND COMPOUNDS	N.A.		1*	5			**	
Cadmium bromide	7789426		100	1		Ą		(4.54)
Cadmium chloride	10108642		100	1		Á		(4.54)
Calcium arsenate	7778441		1000	1		X		(0.454)
Calcium arsenite	52740166		1000	1		×		(0.454)
Calcium carbide	75207 13765190	Chromic acid, H2CrO4,	5000 1000	1,4	U032	A	1 1	(4.54) (4.54)
Calcium chromate	13/63190	calcium sait	1000	1,4	0036	^	10	(4.24)
Calcium cyanide	592018	Calcium cyanide	10	1,4	P021	A	10	(4.54)
Calatim avanida CatCH12	592018	Ca(CN)2 Calcium cyanide	10	1,4	P021	A	10	(4.54)
Calcium cyanide Ca(CN)2 Calcium dodecylbenzene	26264062	Cattian Cyanica	1000	1,7	,	ĉ		(454)
sulfonate	20201002		,000	•		•	1000	(424)
Calcium hypochiorite	7778543		100	1		A	10	(4.54)
Camphene, octachloro-	8001352	Toxaphene	1	1,2,4	P123	X		(0.454)
Captan	133062		10	1		A		(4.54)
Carbamic acid,	51796	Ethyl carbamate	1*	4	U238	8	100	(45.4)
ethyl ester		(urethane)						
Carbamic acid,	615532	N-Nitroso-N-	1*	4	U178	X	1	(0.454)
methylnitroso-, ethyl ester		methylurethane						
Carbamic chloride, dimethyl-	79447	Dimethylcarbamoyl chloride	1*	4	U097	X		(0.454)
Carbamodithioic acid,	111546	Ethylenebisdithio-	1*	4	U114	D	5000	(2270)
1,2-ethanediylbis,		carbamic acid, salts & esters						
salts & esters Carbamothioic acid,	2303164	Diallate	1*	4	U062	8	100	(45.4)
bis(1-methylethyl)-,	2303704		,	~	5000	•		(72.7)
S-(2,3-dichloro-2-								
propenyl) ester								
Carbaryl	63252		100	1		В	100	(45.4)
Carbofuran	1563662		10	1		A	10	(4.54)
Carbon disulfide	75150		5000	1,4	P022	8	100	(45.4)
Carbon oxyfluoride	353504	Carbonic difluoride	1*	4	U033	C		(454)
Carbon tetrachloride	56235	Methane, tetrachloro-	5000	1,2,4	U211	A		(4.54)
Carbonic acid,	6533739	Thallium(I) carbonate	1*	4	U215	B	100	(45.4)
dithallium (1+) salt								
Carbonic dichloride	75445	Phosgene	5000	1,4	P095	Ä		(4.54)
Carbonic difluoride	353504	Carbon oxyfluoride	1* 1*	4	U033	C		(454)
Carbonochloridic acid,	79221	Methyl chlorocarbonate	1-	4	U156	С	1000	(454)
methyl ester	75876	Methyl chloroformate	1*	4	U034	D	5000	(2270)
Chloral Chlorambucil	305033	Acetaldehyde, trichloro- Benzenebutanoic acid,	1*	7	U035	Ä		(4.54)
CIT OF MILLOC I C	303033	4-[bis(2-chloroethyl)	•	•	0033	_		(7/34)
Chlordane	57749	amino]- Chlordane, sipha & gamma isomers	1	1,2,4	U0 <b>3</b> 6	x	1	(0.454)
		Chlordane, technical 4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octa- chloro-2,3,3a, 4,7,7a-hexahydro-						
CHLORDANE (TECHNICAL				_				
MIXTURE AND METABOLITES)	N.A. 57740	Chlordane	1*	2	11024	v	**	/0 /E/>
Chlordane, alpha & gamma isomers	57749	Chlordane, technical 4,7-Methano- 1H-indene, 1,2,4,5,6 7,8,8-octachloro-2,3,3a,	1	1,2,4	U <b>038</b>	X	•	(0.454)
		4,7,7a-hexahydro-						
Chlordane, technical	57749	Chlordane Chlordane, alpha & gamma isomers	1	1,2,4	U036	X	1	(0.454)
		4,7-Methano-1H-indene, 1,2, 4,5,6,7,8,8-octachloro- 2,3,3a,4,7,7a-hexahydro-						
CHLORINATED BENZENES	N.A.	•	1*	2			**	
CHLORINATED ETHANES	N.A.		1*	2			**	
CHLORINATED NAPHTHALENE	N.A.		1*	2			**	
CHLORINATED PHENOLS	N.A.		1*	2 1			**	11.15.
Chlorine Chlorophazine	7782505 494031	Manhthalanamina 11 111-	10 1*	1	U026	A B		(4.45)
Chlornaphazine	494031	Naphthalenamine, N,N'- bis(2-chloroethyl)-	17	4	0020	0	100	(45.4)
Chloroacetaldehyde	107200	Acetaldehyde, chloro-	1*	4	P023	С	1000	(454)
CHLOROALKYL ETHERS	N.A.	• • • • • • • • •	1*	2	<del>-</del>	-	**	
p-Chloroaniline	106478	Benzenamine, 4-chloro-	1*	4	P024	C		(454)
Chlorobenzene	108907	Benzene, chioro-	100	1,2,4	U037	8		(45.4)
Chlorobenzilate	510156	Benzeneacetic acid, 4-chloro-alpha-(4- chlorophenyl)-alpha- hydroxy-, ethyl eater	1*	4	U038	<b>A</b>	10	(4.54)

				vhi	Jenuix I	- (6	Jiitiiiu	cu)
-Chloro-m-cresol	59507	p-Chloro-m-cresol Phenol, 4-chloro-3- methyl-	1*	2,4	U039	D	5000	(2270)
o-Chloro-m-cresol	59507	Phenol, 4-chloro-3- methyl- 4-Chloro-m-cresol	1*	2,4	u0 <b>39</b>	D	5000	(2270)
Chlorodibromomethane	124481	4.CU(OLO-III-C) #50(	1*	2		8	100	(45.4)
Chioroethane	75003		j•	Ž		B		(45.4)
2-Chloroethyl vinyl ether	110758	Ethene, 2-chloroethoxy-	1*	2,4	U042	C		(454)
Chloroform	67663	Methane, trichloro-	5000	1,2,4	U044	Ą		(4.54)
Chloromethyl methyl ether	107302	Methane, chloromethoxy-	1*	4	U046	A		(4.54)
peta-Chioronaphthalene	91587	Napthalene, 2-chloro- 2-Chloronaphthalene	1*	2,4	U047	D		(2270)
2-Chloronaphthalene	91587	beta-Chloronaphthalene Naphthalene, 2-chloro-	1*	2,4	U047	D -		(2270)
2-Chlorophenol	95578	o-Chlorophenol Phenol, 2-chloro-	1*	2,4	U048	8		(45.4)
o-Chlorophenol	95578	Phenol, 2-chloro- 2-Chlorophenol	1*	2,4	U048	8		(45.4)
4-Chlorophenyl phenyl ether	7005723	• • • • • • • • • • • • • • • • • • • •	1*	2		D		(2270)
1-(o-Chlorophenyl)thiourea	5344821	Thiourea, (2- chlorophenyl)-	1*	4	P026	В	100	(45.4)
3-Chloropropionitril <del>e</del>	542767	Propanenitrile, 3- chloro-	1*	4	P027	C	1000	(454)
Chlorosulfonic acid	7790945		1000	1		С	1000	(454)
-Chloro-o-toluidine,	3165933	Benzenamine,	1*	4	U049	8		(45.4)
hydrochloride		4-chloro-2-methyl-, hydrochloride						
Chlorpyrifos	2921882	.,	1	1		X	1	(0.454)
Chromic acetate	1066304		1000	1		C		(454)
Chromic acid	11115745		1000	1		A	10	(4.54)
Thomas and d	7738945 13765190	Calcium chromate	1000	1,4	u032	A	10	(4.45)
Chromic acid H2CrO4, calcium	13/03/190	Catcrain cirronate	1000	1,4	0032	^	10	(4.43)
salt Chromic sulfate	10101538		1000	1		С	1000	(454)
Chromium ++	7440473		1*	ż		Ď		(2270)
CHROMIUM AND COMPOUNDS	N.A.		1*	2			**	
Chromous chloride	10049055		1000	1		C		(454)
Chrysene	218019	1,2-Benzphenanthrene	1*	2,4	U050	B C		(45.4)
Cobaltous bromide Cobaltous formate	7789437 544183		1000 1000	1		C		(454) (454)
Cobaltous sulfamete	14017415		1000	i		č		(454)
Coke Oven Emissions	N.A.		1*	3		X		(0.454)
Copper cyanide CuCN	544923	Copper cyanide	1*	4	P029	A		(4.54)
Copper ++	7440508		1*	2		D	5000	(2270)
COPPER AND COMPOUNDS	N.A. 544923	Copper cyanide CuCN	1* 1*	2	P029	A		(4.54)
Copper cyanide Coumaphos	56724	copper cyantide cuch	10	i	7027	Â		(4.54)
Creosote	8001589		1*	4	U051	X		(0.454)
Cresol(s)	1319773	Cresylic acid	1000	1,4	U052	С	1000	(454)
		Phenol, methyl-						
m-Cresol	108394 95487	m-Cresylic acid o-Cresylic acid						
o-Cresol p-Cresol	106445	p-Cresylic acid						
Cresylic acid	1319773	Cresol(s)	1000	1,4	U052	C	1000	(454)
		Phenol, methyl-		-				
m-Cresol	108394	m-Cresylic acid						
o-Cresol	95487	o-Cresylic acid						
p-Cresol Crotonaldehyde	106445 123739	p-Gresylic acid 2-Butenal	100	1,4	U053	8	100	(45.4)
Crotonatdenyde	4170303	E-parenar	100	1,7	0033	•	100	(43.4)
Cumene	98828	Benzene, 1-methylethyl-	1*	4	U055	D	5000	(2270)
Cupric acetate	142712		100	1		8	100	(45.4)
Cupric acetoarsenite	12002038		100	1		X		(0.454)
Cupric chloride	7447394		10	1		A		(4.54)
Cupric nitrate	3251238 5893663		100 100	1		8 8		(45.4) (45.4)
Cupric oxalate Cupric sulfate	7758987		100	i		Ä		(4.54)
Cupric sulfate	10380297		100	i		Ê		(45.4)
ammoniated				•		_		
Cupric tartrate	815827		100	1		8		(45.4)
CYANIDES Cyanides	N.A. 57125		1* 1*	2 4	P030	A	10	(4.54)
(soluble saits and complexes) not otherwise specified								ŕ

				- 4.4	THUIL .		
yanogen	460195	Ethanedinitrile	1*	4	P031	8	100 (45.4)
Syanogen bromide Syanogen bromide (CN)Br	506683 506683	Cyanogen bromide (CN)Br Cyanogen bromide	1* 1*	4	U246 U246	C	1000 (454) 1000 (454)
(CN)Br Cyanogen chloride	506774	Cyanogen chloride	10	1,4	P033	A	10 (4.54)
yenogen chloride	506774	(CN)Cl Cyanogen chloride	10	1,4	P033	A	10 (4.45)
(CN)Cl !,5-Cyclohexadiene- 1.4-dione	106514	p-Benzoqu'i none	1*	4	u197	A	10 (4.54)
Cyclohexane	110827	Benzene, hexahydro-	1000	1,4	U056	C	1000 (454)
Cyclohexame, 1,2,3, 4,5-6-hexachloro-, (1elpha,2elpha, 3beta,4elpha,5elpha, 6beta)-	58899	gamma-BHC Hexachlorocyclohexane (gamma isomer) Lindane	1	1,2,4	U129	X	1 (0.454
Cyclohexanone 2-Cyclohexyl-4,6-	108941 131895	Phenoi, 2-cyclohexyl-	1* 1*	4	U057 P0 <b>3</b> 4	0 <b>8</b>	5000 (2270) 100 (45.4)
dinitrophenol 1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	77474	4,6-dinitro- Hexachlorocyclopenta- diene	1	1,2,4	U1 <b>3</b> 0	A	10 (4.54)
Cyclophosphamide	50180	2H-1,3,2- Oxazaphosphorin-2- amine, N,N-bis(2-chloro ethyl)tetrahydro-,2- oxide	1*	4	u05 <b>8</b>	A	10 (4.54)
2,4-D Acid	94757	Acetic acid (2,4- dichlorophenoxy)- 2,4-D, salts and esters	100	1,4	U240	B	100 (45.4)
2,4-D Esters	94111 94791 94804 1320189 1928387 1928616 1929733 2971382 25168267 53467111	E, V O, Carto and Corta	100	1		8	100 (45.4)
2,4-D, salts and esters	94757	Acetic acid (2,4-di- chlorophenoxy)-2,4- D Acid	100	1,4	u240	8	100 (45.4)
Daunomy <i>c</i> in	20830813	5,12-Naphthacenedione, 8-acetyl-10-(3-amino- 2,3,6-trideoxy-alpha- L-lyxo-hexo-pyranosyl) oxyl-7,8,9,10-tetra- hydro-6,8,11-trihydroxy- 1-methoxy-,(8S-cis)-	1*	4	u059	A	10 (4.54)
ODD	72548	Benzene, 1,1'-(2,2-di- chloroethylidene)bis [4-chloro- TDE 4,4' DDD	1	1,2,4	U060	X	1 (0.454
5,4º DDD	72548	Benzene, 1,1'-(2,2-di- chloroethylidene)bis (4-chloro- DDD TDE	1	1,2,4	U060	X	1 (0.454
DOE	72559	4,4' DDE	1*	2		X	1 (0.454
,4' DDE DT	72559 50293	DDE Benzene, 1,1'-(2,2,2- trichloroethylidene) bis[4-chloro-	1*	2 1,2,4	u061	X	1 (0.454 1 (0.454
4,4'DDT	50293	4,4'DDT Benzene, 1,1'-(2,2,2- trichloroethylidene) bis[4-chloro- DDT	1	1,2,4	U061	x	1 (0.454
DDT AND METABOLITES Diallate	N.A. 2303164	Carbamothicic acid, bis (1-methylethyl)-, S-(2,3- dichloro-2-propenyl) ester	1*	2 4	U062	В	100 (45.4)
Diazinon Dibenz(a,h)anthracene	333415 53703	Dibenzo (a,h) anthracene 1,2:5,6-Dibenzanthracene	1 1*	1 2,4	U063	X	1 (0.454 1 (0.454

1,2:5,6- Dibenzanthracene Dibenzo[a,h]anthracene Dibenz[a,i]pyrene 1,2-Dibromo-3-	53703 53703	Dibenzo(a,h) anthracene Dibenz(a,h) anthracene	1*	2,4 2,4	U063	x x		(0.454)
Dibenzo[a,h]anthracene Dibenz[a,i]pyrene	53703	Dibenz (a, h) anthracene	1*	2.4	U063	v		
ibenz[a,i]pyrene	53/03		1"	2.4				40 /E/ \
		1,2:5,6- Dibenzanthracene			0000	^	1	(0.454)
.2-Dibromo-3-	189559	Benzo (rst) pentaphene	1*	4	U064	A		(4.54)
•	96128	Propane, 1,2-dibromo-3-	1*	4	U066	X	1	(0.454)
chloropropane butyl phthalate	84742	chloro- Di-n-butyl phthalate n-Butyl phthalate 1,2-Benzenedicarboxylic	100	1,2,4	U0 <b>69</b>	A	10	(4.54)
i-n-butyl phthalate	84742	acid, dibutyl ester Dibutyl phthalate n-Butyl phthalate 1,2-Benzenedicarboxylic acid, dibutyl ester	100	1,2,4	U <b>069</b>	A	10	(4.54)
icamba	1918009	2014, 21247, 2234	1000	1		С	1000	(454)
ichlobenil	1194656		1000	1		8		(45.4)
ichlone	117806		1	1		X		(0.454)
	25321226	Bensene 1 3-dichlere	100	1	U070	8 8		(45.4)
,2-Dichlorobenzene	95501	Benzene, 1,2-dichloro- o-Dichlorobenzene	100	1,2,4	0070	8	100	(45.4)
,3-Dichlorobenzene	541731	Benzene, 1,3-dichloro m-Dichlorobenzene	1*	2,4	U071	8		(45.4)
,4-Dichlorobenzene	106467	Benzene, 1,4-dichloro	100	1,2,4	U072	В	100	(45.4)
n-Dichlorobenzene	541731	p-Dichlorobenzene Benzene, 1,3-dichloro	1*	2,4	u071	8	100	(45.4)
o-Dichlorobenzene	95501	1,3-Dichlorobenzene Benzene, 1,2-dichloro	100	1,2,4	U0 <b>7</b> 0	В	100	(45.4)
o-Dichlorobenzene	106467	1,2-Dichlorobenzene Benzene, 1,4-dichloro	100	1,2,4	U072	В	100	(45.4)
DICHLOROBENZIDINE	N .	1,4-Dichlorobenzene	4.	•				
3,3'-Dichlorobenzidine	N.A. 91941	[1,1'-Biphenyl]- 4,4'diamine,3,3'dichloro-	1* 1*	2 2,4	U073	x	1	(0.454)
Dichlorobromomethane	75274	TIT GIGHTIE 13,3 GICHEOIG	1*	2		D	5000	(2270)
1,4-Dichloro-2-butene	764410	2-Butene, 1,4-dichloro-	j*	4	U074	X		(0.454)
Dichlorodifluoromethane	75718	Methane,	1*	4	U075	D		(2270)
,1-Dichloroethane	75343	dichlorodifluoro- Ethane, 1,1-dichloro- Ethylidene dichloride	1*	2,4	U076	C	1000	(454)
1,2-Dichloroethane	107062	Ethane, 1,2-dichloro- Ethylene dichloride	5000	1,2,4	U077	8	100	(45.4)
1,1-Dichloroethylene	75354	Ethene, 1,1-dichloro- Vinylidene chloride	5000	1,2,4	U078	B	100	(45.4)
1,2-Dichloroethylene	156605	Ethene, 1,2- dichloro-(E)	1*	2,4	U079	С	1000	(454)
Dichloroethyl ether	111444	Bis (2-chloroethyl) ether Ethane, 1,1'-	1*	2,4	U025	A	10	(4.54)
Dichloroisopropyl	108601	oxybis[2-chloro- Propane, 2,2!-	1*	2,4	U027	С	1000	//5/>
ether		oxybis[2-chloro-	•	6,7	0021	C	1000	(454)
oichloromethoxy ethane	111911	Bis(2-chloroethoxy) methane Ethane, 1,1'- [methylenebis(oxy)]bis (2-chloro-	1*	2,4	U024	С	1000	(454)
Dichloromethyl ether	542881	Methane, oxybis(chloro-	1*	4	P016	A	10	(4.54)
2,4-Dichlorophenol	120832	Phenol, 2,4-dichloro-	1*	2,4	U081	B		(45.4)
2,6-Dichlorophenol Dichlorophenylarsine	87650 696286	Phenot, 2,6-dichloro- Arsonous dichloride,	1* 1*	4	U082 P036	B X		(45.4) (0.454)
Dichloropropane 1,1-Dichloropropane	26638197 78999	phenyl -	5000	1		С	1000	(454)
1,3-Dichtoropropane	142289							
1,2-Dichloropropane	78875	Propane, 1,2-dichloro- Propylene dichloride	5000	1,2,4	U083	С	1000	(454)
Dichloropropane - Dichloropropene (mixture)	8003198	riopytana arantariaa	5000	1		8	100	(45.4)
· · · · · · · · · · · · · · · · · · ·	26952238 7 <b>888</b> 6		5000	1		8	100	(45.4)
1,3-Dichloropropene	542756	1-Propene,1,3- dichloro-	5000	1,2,4	U084	8	100	(45.4)
	75990		5000	1		D	5000	(2270)
2,2-Dichloropropionic acid								

						<u> </u>	
Dieldrin	60571	2,7:3,6-Dimethano- naphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro- 1a,2,2a,3,6,6,7,7a- octahydro-, (1aalpha,2beta,2aalpha,	1	1,2,4	P037	X	1 (0.454)
		3beta,6beta, 6aalpha, 7beta,7aalpha)-					
1,2:3,4-Diepoxybutane	1464535	2,2'-Bioxirane	1*	4	U085	A	10 (4.54)
Diethylamine Diethylarsine	109 <b>8</b> 97 692422	Arsine, diethyl-	1000 1*	1	P038	8 X	100 (45.4)
1,4-Diethylenedioxide	123911	1,4-Dioxane	1*	4	U108	ŝ	1 (0.454) 100 (45.4)
Diethylhexyl phthalate	117817	Bis (2-ethylhexyl) phthalate 1,2-Benzene- dicarboxylic acid, [bis (2-ethylhexyl)] ester	1*	2,4	U028	8	100 (45.4)
N,N'-Diethylhydrazine	1615801	Hydrazine, 1,2-diethyl-	1*	4	U086	A	10 (4.54)
D,D-Diethyl S- methyl dithiophosphate	3288582	Phosphorodithioic acid, O,O-diethyl S-methyl ester	1*	4	U087	D	5000 (2270)
Diethyl-p-nitrophenyl phosphate	311455	Phosphoric acid, diethyl 4-nitrophenyl ester	1*	4	P041	В	100 (45.4)
Diethyl phthalate	84662	1,2-Benzenedicarboxylic acid, diethyl ester	1*	2,4	U088	С	1000 (454)
0,0-Diethyl O-pyrazinyl phosphorothicate	297972	Phosphorothioic acid, 0,0-diethyl 0- pyrazinyl ester	1*	4	P040	В	100 (45.4)
Diethylstilbestrol	56531	Phenol, 4,4'-(1,2- diethyl-1,2-ethenediyl) bis-,(E)	1*	4	U0 <b>89</b>	X	1 (0.454)
Dihydrosafrole	94586	1,3-Benzodioxole, 5- propyl-	1*	4	U090	A	10 (4.54)
Disopropyliluorophosphate	55914	Phosphorofluoridic acid, bis(1-methylethyl) ester	1*	4	P043	8	100 (45.4)
1,4,5,8-Dimethano napthalene, 1,2,3,4, 10,10-10-hexachloro- 1,4,4a,5,8,8a-hexa- hydro-, (1alpha,	309002	Aldrin	1	1,2,4	P004	x	1 (0.454)
4alpha,4abeta,5alpha,8alpha, Babeta)-1,4, 5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachtoro- 1,4,4a,5,8,8a-hexahydru, (1alpha,4alpha,4abeta,	465736	Isodrin	1*	4	P060	x	1 (0.454)
5abeta,8beta, 3abeta)- 2,7:3,6-Dimethano- naphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro- 1a,2,2a,3,6,6a,7,7a- octahydro-,(1aalpha,2beta, 2aalpha,3beta,6beta,	60571	Dieldrin	1	1,2,4	P037	x	1 (0.454)
6aalpha, 7beta, 7aalpha) - 2,7:3,6-Dimethanonaphth [2,3-b] oxirene, 3,4,5,6,9,9-hexachloro- 1a,2,2a,3,6,6a,7,7a- octa-hydro-,(1aalpha, 2beta,2abeta,3alpha,6alpha,	72208	Endrin Endrin, & metabolites	1	1,2,4	P051	x	1 (0.454)
6alpha,6abeta,7beta 7alpha)-Dimethoate	60515	Phosphorodithioic acid, O,O-dimerryl S-[2 (methylar no)-2-oxo- ethyl] ester	1*	4	P044	A	10 (4.54)
3,3'-Dimethoxybenzidine	119904	[1,1'-Biphenyl]- 4,4'diamine,3,3' dimethoxy-	1*	4	U091	8	100 (45.4)
Dimethylamine	124403	Methanamine, N-methyl-	1000	1,4	U092	c	1000 (454)
p-Dimethylamino- azobenzen <del>e</del>	60117	Benzenamine, N,N- dimethyl-4-(phenylazo-)	1*	4	U093	A	10 (4.54)
7,12-Dimethylbenz(a)	57976	Benz (a) anthracene,	1*	4	U094	x	1 (0.454)
3,3'-Dimethylbenzidine	117937	7,12-dimethyl- [1,1'Biphenyl]-4,4'- diamine,3,3'-dimethyl-	1*	4	U0 <b>95</b>	A	10 (4.54)
alpha,alpha- Dimethylbenzyl- hydroperoxide	80159	Hydroperoxide, 1-methyl- 1-phenylethyl-	1*	4	U096	A	10 (4.54)

				Ap	pendix	I -	(contin	ued)
Dimethylcarbamoyl	79447	Carbamic chloride,	1*	4	U097	X	1	(0.454)
chloride	57147	dimethyl-	1*	4	u098	A	10	(4.54)
1,1-Dimethylhydrazine	540 <b>738</b>	Hydrazine,1,1-dimethyl- Hydrazine,1,2-dimethyl-	1*	- 4	U098	x		(0.454)
1,2-Dimethylhydrazine	122098	Benzeneethanamine,	1*	4	P046	Ĝ		(2270)
sipha,aipha- Dimethyiphenethyiamine	122070	alpha, alpha-dimethyl-	•	•	7040	•	2000	(2210)
2,4-Dimethylphenol	105679	Phenol, 2,4-dimethyl-	1*	2,4	U101	8	100	(45.4)
Dimethyl phthalate	131113	1,2-Benzenedicarboxylic	i*	2,4	u102	Ď		(2270)
Jimethyt pithatate	151115	acid, dimethyl ester	•	-, .			2000	,,
Dimethyl sulfate	77781	Sulfuric acid, dimethyl ester	1*	4	U103	8	100	(45.4)
Dinitrobenzene (mixed)	25154545		1000	1		В	100	(45.4)
m-Dinitrobenzene	99650		,	·		-		• • • • • • • • • • • • • • • • • • • •
o-Dinitrobenzene	528290							
p-Dinitrobenzene	100254							
4,6-Dinitro-o-cresol	534521	Phenol, 2-methyl-4,6-	1*	2,4	P047	A	10	(4.54)
and salts		dinitro-		•				
Dinitrophenol	25550587		1000	1		A	10	(4.54)
2,5-Dinitrophenol	329715							
2,6-Dinitrophenol	573568							
2,4-Dinitrophenol	51285	Phenol, 2,4-dinitro-	1000	1,2,4	P048	A	10	(4.54)
Dinitrotoluene	25321146		1000	1,2		A	10	(4.54)
3,4-Dinitrotoluene	610399							
2,4-Dinitrotoluene	121142	Benzene,1-methyl-2,4- dinitro-	1000	1,2,4	U105	A	10	(4.54)
2,6-Dinitrotoluene	606202	Benzene, 2-methyl-1,3- dinitro-	1000	1,2,4	U106	8	100	(45.4)
Dinoseb	88857	Phenol, 2-(1-methyl-	1*	4	P020	C	1000	(454)
		propyl)-4,6-dinitro						
Di-n-ostyl phthalate	117840	1,2-Benzenedicarboxylic acid, dioctyl ester	1*	2,4	U107	D	5000	(2270)
1.4-Dioxane	123911	1,4-Diethylenedioxide	1*	4	U108	В	100	(45.4)
DIPHENYLHYDRAZINE	N.A.	• • • • • • • • • • • • • • • • • • • •	1*	2			**	
1,2-Diphenylhydrazine	122667	Hydrazine, 1, 2-diphenyl-	1*	2,4	ป109	A	10	(4.54)
Diphosphoramide,	152169	Octamethylpyrophos-	1*	4	P085	В	100	(45.4)
octamethyl-		phoramide						
Diphosphoric acid,	107493	Tetraethyl pyrophos-	100	1,4	P111	A	10	(4.54)
tetraethyl ester		phate		•			,-	******
Dipropylamine	142847	1-Propanamine, N-propyl-	1*	4	U110	D	5000	(2270)
Di-n-propylnitrosamine	621647	1-Propanamine, N-nitroso- N-propyl-	1*	2,4	U111	A	10	(4.54)
Diquat	85007		1000	1		С	1000	(454)
•	2764729			•		-		• ,
Disulfoton	298044	Phosphorodithioic acid, o,o-diethyl S-[2-	1	1,4	P039	X	1	(0.454)
		(ethylthio)ethyl]ester						
Dithiobiuret	541537	Thiomidodicarbonic diamide [(H2N) C(S)]	1*	4	P049	8	100	(45.4)
<b>9</b>	770514	2NH	400			_		
Diuron	330541		100	1		B		(45.4)
Dodecy i benzenesu i -	27176870		1000	1		C	1000	(454)
fonic acid	115207	4 O Mathan 2 / 7						
<b>Endosul fan</b>	115297	6,9-Methano-2,4,3- benzodioxathiepin, 6,7,8,9,10,10-hexa- chloro-1,5,5a,6,9,9a- hexahydro-, 3-oxide	1	1,2,4	P050	X	1	(0.454)
alpha - Endosulfan	959988		1*	2		X	1	(0.454)
beta - Endosulfan	33213659		1*	2		X	1	(0.454)
ENDOSULFAN AND METABOLITES	N.A.		1*	2			**	
Endosulfan sulfate	1031078		1*	2		X	1	(0.454)
Endothall	145733	7-Oxabicyclo[2.2.1] heptane-2,3-	1*	4	P088	С	1000	(454)
Endrin	72208	dicarboxylic acid Endrin, & metabolites 2,7:3,6-Dimethano- naphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro- 1a,2,2a,3,6,6a,7,7a- octa-hydro-,(1aalpha, 2beta,2abeta,3alpha, 6alpha,6abeta,7beta, 7aalpha)-	1	1,2,4	P051	x	1	(0.454)
Endrin aldebude	7421934	7aalpha)-	1.	3				10 121.
Endrin aldehyde			1*	2		X	1	(0.454)
ENDRIN AND METABOLITES	N.A.		1*	2			**	

Endrin, & metabolites	72208	Endrin 2,7:3,6-Dimeth- anonaphth[2,3-b] oxirene, 3,4,5,6,9,9- hexachloro-1a,2,2a,3, 6,6a,7,7a-octa-hydro-, (1aalpha,2beta,2abeta, 3alpha,6alpha,	1	1,2,4	P051	X	1	(0.454)
	454999	6abeta,7beta,7aalpha)-	4000	• .	U041	В	100	(45.4)
Epichlorohydrin Epinephrine	106898 51434	Oxirane, (chloromethyl)- 1,2-Benzenediol, 4-[1- hydroxy-2- (methylamino)ethyl]-	1000 1*	1,4	P042	C	1000	(454)
Ethanal	75070	Acetaldehyde	1000	1,4	U001	C	1000	
Ethanamine, N-ethyl-N-nitroso-	55185	N-Nitrosodiethylamine	1*	4	U174	X		(0.454)
1,2-Ethanediamine, N,N-dimethyl-N'-2- pyridinyl-N'-(2- thienylmethyl)-	91805	Methapyrilene	1*	4	U155	D		(2270)
Ethane, 1,2-dibromo-	106934	Ethylene dibromide	1000	1,4	U067	X		(0.454)
Ethane, 1,1-dichloro-	75343	Ethylidene dichloride 1,1-Dichloroethane	1*	2,4	U076	C	1000	
Ethane, 1,2-dichloro-	107062	Ethylene dichloride 1,2-Dichloroethane	5000	1,2,4	U077	В	,	(45.4)
Ethanedinitrile	460195	Cyanogen	1*	4	P031 U131	8 B		(45.4) (45.4)
Ethane, hexachloro-	67721	Hexachloroethane Bis(2-chloroethoxy)	1* 1*	2,4 2,4	U024	Č	1000	
Ethane, 1,1'-[methylenebis (oxy)]bis(2-chloro-	111911	methane Dichloromethoxy ethane	•	-14	0024	-	,500	• • • • • • • • • • • • • • • • • • • •
Ethane, 1,1'-oxybis-	60297	Ethyl ether	1*	4	U117	8		(45.4)
Ethane, 1,1'-oxybis[2-chloro-	111444	Bis (2-chloroethyl) ether	1*	2,4	U025	٨	10	(4.54)
	7/017	Dichloroethyl ether	1*	4	U184	A	10	(4.54)
Ethane, pentachloro- Ethane, 1,1,1,2-tetrachloro-	76017 630206	Pentachloroethane 1,1,1,2- Tetrachloroethane	1*	4	U208	B		(45.4)
Ethane, 1,1,2,2-tetrachloro-	79345	1,1,2,2- Tetrachloroethane	1*	2,4	U209	В	100	(45.4)
Ethanethioamide	62555	Thioacetamide	1*	4	U218	A		(4.54)
Ethane, 1,1,1-trichloro-	71556	Methyl chloroform 1,1,1-Trichloroethane	1*	2,4	U226	C		(454)
Ethane, 1,1,2-trichloro-	79005	1,1,2-Trichlorosthane	1* 1*	2,4 4	U227 P066	8 8		(45.4) (45.4)
Ethanimidiothioic acid, N-[[(methylamino)carbonyl] oxy]-, methyl ester	16752775	Methomyl	1"	4	F005	•	100	(43.47
Ethanol, 2-ethoxy-	110805	Ethylene glycol mono- ethyl ether	1*	4	u359	С		(454)
Ethanol, 2,2'- (nitrosoimino)bis-	1116547	N-Nitrosodiethanolamine	1*	4	U173	X		(0.454)
Ethanone, 1-phenyl-	98862	Acetophenone	1*	4	U004	D		(2270)
Ethene, chloro-	75014	Vinyl chloride	1*	2,3,4	U043 U042	X		(0.454) (454)
Ethene, 2-chloroethoxy- Ethene, 1,1-dichloro-	110758 75354	2-Chloroethyl vinyl ether Vinylidene chloride 1,1-Dichloroethylene	1* 5000	2,4 1,2,4	U078	В		(45.4)
Ethene, 1,2-dichloro- (E)	156605	1,2-Dichloroethylene	1*	2,4	U079	С	1000	(454)
Ethene, tetrachloro-	127184	Perchloroethylene Tetrachloroethene	1*	2,4	U210	В	100	(45.4)
Ethene, trichloro-	79016	Tetrachloroethylene Trichloroethene Trichloroethylene	1000	1,2,4	U228	В	100	(45.4)
Ethion	563122	•	10	1		A		(4.54)
Ethyl acetate Ethyl acrylate	141786 140885	Acetic acid, ethyl ester 2-Propenoic acid, ethyl	1* 1*	4	U112 U113	C		(2270) (454)
Ethyl hanzana	100414	ester	1000	1,2		С	1000	(454)
Ethylbenzene	51796	Carbamic acid,	1*	4	U2 <b>38</b>	В		(45.4)
Ethyl carbamate (urethane)	J1170	ethyl ester	•	•		_		
Ethyl cyanide	107120	Propanenitrile	1*	4	P101	A		(4.54)
Ethylenebisdithiocarbamic	111546	Carbamodithioic acid,	1*	4	U114	D	5000	(2270)
acid, salts & esters		1,2-ethanediylbis, salts & esters						

Appendix 1	[ - (	(continue	ď
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				1144	CHUIA I	(0)	Jiminuc	
Ethylenediamine	107153		1000	1		D	5000 (	
Ethylenediamine- tetraacetic acid (EDTA)	60004		5000	1		D	5000 (	2270)
Ethylene dibromide Ethylene dichloride	106934 107062	Ethane, 1,2-dibromo- Ethane, 1,2-dichloro-	1000 5000	1,4 1,2,4	U067 U077	X B		0.454) 45.4)
		1,2-Dichloroethane						
Ethylene glycol monoethyl ether	110805	Ethanol, 2-ethoxy-	1*	4	u359	C	1000 (	454)
Ethylene oxide	75218	Oxirane	1*	4	U115	A	10 (	4.54)
Ethylenethiourea	96457	2-Imidazolidinethione	1*	4	U116	A		4.54)
Ethylenimine	151564	Aziridine	1*	4	P054	X	1.0	0.454)
Ethyl ether	60297	Ethane, 1,1'-oxybis-	1*	4	U117	B		45.4)
Ethylidene dichloride	75343	Ethane, 1,1-dichloro- 1,1-Dichloroethane	1*	2,4	U076	С	1000 (	
Ethyl methacrylate	97632	2-Propenoic acid, 2-methyl-, ethyl ester	1*	4	U118	С	1000 (	454)
Ethyl methanesulfonate	62500	Methanesulfonic acid, ethyl ester	1*	4	U119	X	- 1 (	(0.454)
Famphur	52857	Phosphorothioic acid, O,[4-[(di-methylamino) sulfonyl] phenyl] O,O- dimethyl ester	1*	4	P097	С	1000 (	(454)
Ferric ammonium citrate	1185575	difficulty care	1000	1		C	1000	454)
Ferric ammonium oxalate	2944674 55488874		1000	i		Č	1000	
Ferric chloride	7705080		1000	1		C	1000 (	(454)
Ferric fluoride	7783508		100	1		В	100 (	45.4)
Ferric nitrate	10421484		1000	1		Ç	1000 (	
Ferric sulfate	10028225		1000	1		C	1000	
Ferrous ammonium sulfate	10045893		1000	1		C	1000 (	
Ferrous chloride	775 <b>8</b> 943 7720787		100 1000	1		B C		(45.4)
Ferrous sulfate	7782630	- 4141		-			1000 (	
Fluoranthene	206440	Benzo[j,k]fluorene	1*	2,4	U120	В	_	(45.4)
Fluorene	86737 7782414		1* 1*	2 4	P056	D A	5000 (	
Fluorine Fluoroacetamide	640197	Acetamide, 2-fluoro-	1*	7	P057	B		(4.54) (45.4)
Fluoroacetic acid,	62748	Acetic acid, fluoro-, sodium salt	1*	4	P058	Ä		4.54)
sodium salt Formaldehyde	50000	Source Satt	1000	1,4	U122	В	100	(45.4)
Formic acid	64186		5000	1,4	U123	Ď	5000	
Fulminic acid, mercury(2+)salt	628864	Mercury fulminate	1*	4	P065	Ā		(4.54)
Fumaric acid	110178		5000	1		D	5000 (	(2270)
Furan	110009	Furfuran	1*	4	U124	В	100	(45.4)
Furan, tetrahydro-	109999	Tetrahydrofuran	1*	4	U213	C	1000 (	(454)
2-Furancarboxaldehyde	98011	Furfural	1000	1,4	U125	D	5000 (	
2,5-Furandione	108316	Maleic anhydride	5000	1,4	U147	D	5000 (	
Furfural Furfuran	98011 110009	2-furancarboxaldehyde	1000	1,4	U125	D	5000	
Glucopyranose, 2-	18883664	Furan D-Glucose, 2-deoxy-2-	1* 1*	4	U124 U206	B X		(45.4)
deoxy-2-(3-methyl- 3-nitrosoureido)-	10003004	[[(methylnitrosoa- mino)-carbonyl]amino]	1-	•	U206	^	• •	(0.454)
5 m cr 655d. Crd5,		Streptozotocin						
D-Glucose, 2-deoxy-	18883664	Glucopyranose, 2-deoxy-	1*	4	U206	X	1	(0.454)
2-[[(methylnitroso-		2-(3-methyl-3-nitro- soureido)-						
amino)-carbonyl] amino]		Streptozotocin						
Glycidylaldehyde	765344	Oxiranecarboxyal dehyde	1*	4	U126	A	10	(4.54)
Guanidine, N-methyl- N'-nitro-N-nitroso-	70257	MNNG	1*	4	U163	Ä		(4.54)
Guthion	86500		1	1		x	1	(0.454)
HALOETHERS	N.A.		i*	ż			**	+04/
HALOMETHANES	N.A.		j*	2			**	
Heptachlor	76448	4,7-Methano-1H- indene,1,4,5,6,7,8,8- heptachloro-3a,4,7,7a- tetrahydro-	1	1,2,4	P059	X	1	(0.454)
HEPTACHLOR AND METABOLITES	N.A.	to traily ar o	1*	2			**	
Heptachlor epoxide	1024573		1*	2		х	1	(0.454)
Hexachlorobenzene	118741	Benzene, hexachloro-	1*	2,4	U127	A		(4.54)
Hexachlorobutadiene	87683	1,3-Butadiene, 1,1,2,3, 4,4-hexachloro-	1*	2,4	U128	X		(0.454)
HEXACHLOROCYCLOHEXANE (all isomers)	608731		1*	2			**	
Hexachtorocyctohexane (gamma isomer)	58899	Cyclohexane, 1,2,3,4,5, 6-hexachloro-,(1alpha, 2alpha,3beta,4alpha, 5alpha,6beta)-gamma- BHC Lindane	1	1,2,4	U129	X	1	(0.454)

lexachlorocyclopentadiene	77474	1,3-Cyclopentadiene,	1	1,2,4	u130	A	10 (4.54)
levechi encethana	67721	1,2,3,4,5,5-hexachloro-	1*	2,4	u131	В	100 (45.4)
lexach Loroethane lexach Lorophene	70304	Ethane, hexachloro- Phenol, 2,2'-methylene- bis[3,4,6-trichloro-	1*	4,7	U132	B	100 (45.4)
lexach Loropropene	1888717	1-Propene, 1,1,2,3,3,3- hexachloro-	1*	4	U243	C	1000 (454)
lexaethyl	757584	Tetraphosphoric acid,	1*	4	P062	В	100 (45.4)
tetraphosphate		hexaethyl ester					
lydrazine	302012		1*	4	U133	X	1 (0.454)
lydrazine, 1,2-diethyl-	1615801	N,N'-Diethylhydrazine	1*	4	<b>086</b>	A	10 (4.54)
lydrazine, 1,1-dimethyl-	57147	1,1-Dimethylhydrazine	1*	4	U098	A	10 (4.54)
lydrazine, 1,2-dimethyl-	540738	1,2-Dimethylhydrazine	1*	4	U099	X	1 (0.454)
lydrazine, 1,2-diphenyl-	122667	1,2-Diphenythydrazine	1*	2,4	U109	A	10 (4.54)
lydrazine, methyl-	60344	Methyl hydrazine	1* 1*	4	P068	A B	10 (4.54)
lydrazinecarbothioamide	79196 7647010	Thiosemicarbazide	5000	4	P116	D	100 (45.4) 5000 (2270)
lydrochloric acid	74908	Hydrogen chloride	10	1,4	P063	Ā	10 (4.54)
lydrocyanic acid lydrofluoric acid	7664393	Hydrogen cyanide Hydrogen fluoride	5000	1,4	U134	ŝ	100 (45.4)
lydrogen chloride	7647010	Hydrochloric acid	5000	i	••••	Ď	5000 (2270)
lydrogen cyanide	74908	Hydrocyanic acid	10	1,4	P063	Ā	10 (4.54)
lydrogen fluoride	7664393	Hydrofluoric acid	5000	1,4	U134	В	100 (45.4)
lydrogen sulfide	7783064	Hydrogen sulfide H2S	100	1,4	U135	B	100 (45.4)
lydrogen sulfide H2S	7783064	Hydrogen sulfide	100	1,4	U135	B	100 (45.4)
lydroperoxide,	80159	alpha, alpha-	1*	4	U096	Ā	10 (4.54)
1-methyl-1-		Dimethylbenzyl-					
phenylethyl-		hydroperoxide					
- Imidazolidinethione	96457	Ethylenethiourea	1*	4	U116	A	10 (4.54)
ndeno(1,2,3-cd)pyrene	193395	1,10-(1,2-Phenylene)	1*	2,4	u137	8	100 (45.4)
		pyrene					
,3-Isobenzofurandione	85449	Phthalic anhydride	1*	4	U190	Ð	5000 (2270)
sobutyl alcohol	78831 465736	1-Propanol, 2-methyl-	1* 1*	4	U140 P060	D X	5000 (2270)
sodrin		1,4,5,8-Dimethano- naphthalene, 1,2,3,4, 10,10-hexachloro-1,4, 4a,5,8,8a-hexahydro, (1alpha,4alpha,4abeta, 5beta,8beta,8abeta)-	·	·			1 (0.454)
I sophorone	78591		1*	2		D	5000 (2270)
soprene	78795		1000	1		В	100 (45.4)
sopropanolamine	42504461		1000	1		С	1000 (454)
dodecylbenzenesulfonate	120581	1,3-Benzodioxole, 5-)	1*	4	U141	8	100 (45.4)
503411016	120501	1-propenyl)-	•	•	0171	U	100 (43.4)
(2H)-Isoxazolone,	2763964	Muscimol 5-(Amino-	1*	4	P007	С	1000 (454)
5-(aminomethyl)-		5-(Amino-methyl)- 3-isoxazolol					,,,,,,
(epone	143500	1,3,4-Metheno-2H- cyclobutal[cd]pentalen- 2-one, 1,1a,3,3a,4, 5,5,5a,5b,6-decachloro- octahydro-	1	1,4	U142	X	1 (0.454)
asiocarpin <del>e</del>	303344	2-Butenoic acid, 2- methyl-,7[[2,3- dihydroxy-2-(1- methoxyethyl)-3- methyl-1-oxobutoxy] methyl-2,3,5,7a- tetrahydro-1H- pyrrolizin-1-yl ester, [15-[1alpha(2),7(25*, 3R*),7aalpha]]-	1*	4	U143	A	10 (4.54)
Lead 🕂	7439921	au Mienrhiett	1*	2		A	10 (4.54)
Lead acetate	301042	Acetic acid, lead(2+) salt	5000	1,4	U144	Ä	10 (4.54)
LEAD AND COMPOUNDS	N.A.		1*	2			**
Lead arsenate	7784409		5000	1		X	1 (0.454)
	7645252						•
	10102484						
Lead, bis(acetato-	1335326	Lead subacetate	1*	4	U146	A	10 (4.54)
O)tetrahydroxytri				_			- · · · · ·
Lead chloride	7758954		5000	1		A	10 (4.54)
Lead fluoborate	13814965		5000	1		A	10 (4.54)
Lead fluoride	7783462		1000	1		A	10 (4.54)
Lead iodide	10101630		5000	1		A .	10 (4.54)

				A -	L			
Lead nitrate Lead phosphate	10099748 7446277	Phosphoric acid,	5000 1*	1 4	U145	A		(4.54) (4.54)
		lead (2+) salt (2:3)	•			•		
Lead stearate	7428480 1072351 52652592		5000	1		<b>A</b>	10	(4.54)
Lead subacetate	56189094 1335326	Lead, bis(acetato-0)	1*	4	U146	A	10	(4.54)
Lead sulfate	15739807	tetrahydroxytri	5000	1		A	10	(4.54)
Lead sulfide	7446142 1314870		5000	1		A	10	(4.54)
Lead thiocyanate	592870	_	5000	1		A		(4.54)
Lindane	5 <b>8899</b>	Cyclohexane, 1,2,3,4,5, 6-hexachloro-,(1alpha, 2alpha,3beta,4alpha, 5alpha,6beta)-gamma-BHC Hexachlorocyclohexane (gamma isomer)	1	1,2,4	u129	X		(0.454)
Lithium chromate	14307358		1000 10	1 .		A B		(4.54) (45.4)
Malathion	121755		5000	i		D		(2270)
Maleic acid	110167 108316	2,5-furandione	5000	1,4	U147	Ď		(2270)
Maleic anhydride Maleic hydrazide	123331	3,6-Pyridazinedione, 1,2-dihydro-	1*	4	u148	D	5000	(2270)
Malononitrile	109773	Propanedinitrile	1*	4	U149	C	1000	(454) (0.454)
Melphalan	148823	L-Phenylalanine, 4-{bis(2-chloroethyl) aminol]	1*	4	U150	X	•	(0.434)
Mercaptodimethur	2032657		100	1		A		(4.54)
Mercuric cyanide	592041		1	1		X		(0.454) (4.54)
Mercuric nitrate	10045940		10 10	1		Ā		(4.54)
Mercuric sulfate	7783359 592858		10	i		Â		(4.54)
Mercuric thiocyanate Mercurous nitrate	10415755 7782867		10	i		Ä		(4.54)
Mercury	7439976		1*	2,3,4	U151	X		(0.454)
MERCURY AND COMPOUNDS	N.A.		1*	2			**	
Mercury, (acetate-0)phenyl-	62384	Phenylmercury acetate	1*	4	P092	8	100	(45.4)
Mercury fulminate	628864	Fulminic acid, mercury (2+) salt	1*	4	P065	A		(4.54)
Methacrylonitrile	126987	2-Propenenitrile, 2-methyl-	1*	4	U152	C		(454)
Methanamine, N-methyl- Methanamine, N-methyl-	124403 62759	Dimethylamine N-Nitrosodimethylamine	1000 1*	1,4 2,4	U092 P082	C A		(454) (4.54)
N-nitroso- Methane, bromo-	74839	Methyl bromide	1*	2,4	U029	С	1000	(454)
Methane, chloro-	74873	Methyl chloride	1*	2,4	U045	8		(45.4)
Methane, chloromethoxy-	107302	Chloromethyl methyl ether	1*	4	U046	A		(4.54)
Methane, dibromo-	74953	Methylene bromide	1*	4	U068	C		(454)
Methane, dichloro- Methane,	75092 75718	Methylene chloride Dichlorodifluoromethane	1* 1*	2,4 4	U080 U075	C D		(454) (2270)
dichlorodifluoro- Methane, iodo-	74884	Methyl iodide	1*	4	U138	В	100	(45.4)
Methane, isocyanato-	624839	Methyl isocyanate	1*	3,4	P064	A	10	(4.54)
Methane, oxybis	542881	Dichloromethyl ether	1*	4	P016	A	10	(4.54)
(chloro- Methanesulfenyl	594423	Trichloromethane-	1*	4	P118	В	100	(45.4)
chloride, trichloro- Methanesulfonic acid,	62500	sulfenyl chloride Ethyl methanesulfonate	1*	4	U119	X	1	(0.454)
ethyl ester Methane, tetrachloro-	56235	Carbon tetrachloride	5000	1,2,4	U211	A	10	(4.54)
Methane, tetranitro-	509148	Tetranitromethane	1*	4	P112	A		(4.54)
Methane, tribromo-	75252	Bromoform	1*	2,4	U225	B		(45.4)
Methane, trichloro- Methane, trichloro-	67663 75694	Chloroform Trichloromonofluoro-	5000 1*	1,2,4 4	U044 U121	A D		(4.54) (2270)
fluoro- Methanethiol	74931	methane Methylmercaptan	100	1,4	U153	В	100	(45.4)
6,9-Methano-2,4,3-	115297	Thiomethanol Endosulfan	1	1,2,4	P050	x	1	(0.454)
benzodioxathiepin, 6,7,8,9,10,10-hexachloro- 1,5,5a,6,9,9a-hexahydro-, 3-oxide								

54

				App	pendix	I - (c	ontinu	ed)
1,3,4-Metheno-2H- cyclobutal (cd] pentalen- 2-one,1,1a,3,3a,4,5,5,5a,	143500	Kepone	1	1,4	U142	x	1	(0.454)
5b,6-decachloroctahydro- 4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-	76448	Heptachlor	1	1,2,4	P059	X	1	(0.454)
3a,4,7,7a-tetrahydro- ,7-Methano-1H-indene, 1,2,4,5,6,7,8,8- octachloro-2,3,3a,	57749	Chlordane Chlordane, alpha & gamma isomers	1	1,2,4	u036	x	1	(0.454)
4,7,7a-hexahydro-		Chlordane, technical						
lethanol	67561	Methyl alcohol	1*	4	U154	D	5000	(2270)
lethapyrilene	91805	1,2-Ethanediamine, N,N-dimethyl-N'-2- pyridinyl-N'-(2- thienylmethyl)-	1*	4	U155	D	5000	(2270)
lethomyl	16752775	Ethanimidothioic acid, N-[[(methylamino) carbonyl]oxy]-,methyl ester	1*	4	P066	8	100	(45.4)
Methoxychlor	72435	Benzene, 1,1'-(2,2,2- trichloroethylidene) bis (4-methoxy-	1	1,4	U247	X	1	(0.454)
Methyl alcohol	67561	Methanol	1*	4	U154	D	5000	(2270)
Methyl bromide	74839	Methane, bromo-	1*	2,4	U029	C	1000	(454)
1-Methylbutadiene	504609	1,3-Pentadiene	1*	4	U186	8		(45.4)
Methyl chloride Methyl chlorocarbonate	74873 79221	Methane, chloro- Carbonochloridic acid, methyl ester Methyl chloroformate	1* 1*	2,4 4	U045 U156	C		(45.4) (454)
Methyl chloroform	71556	Ethane, 1,1,1-trichloro- 1,1,1-Trichloroethane	1*	2,4	U226	С	1000	(454)
Methyl chloroformate	79221	Carbonochloridic acid, methyl ester Methyl chlorocarbonate	1*	4	U156	С	1000	(454)
3-Methylcholanthrene	56495	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-	1*	4	U157	A	10	(4.54)
4,4'-Methylenebis(2- chloroaniline)	101144	Benzenamine, 4,4'- methylenebis(2-chloro-	1*	4	U158	A		(4.54)
Methylene bromide	74953	Methane, dibromo-	1*	4	U068	C		(454)
Methylene chloride	75092 78933	Methane, dichloro- 2-Butanone	1* 1*	2,4 4	U080 U159	C		(454) (2270)
Methyl ethyl ketone (MEK) Methyl ethyl ketone peroxide	1338234	2-Butanone peroxide	1*	4	U160	Å	10	(4.54)
Methyl hydrazine	60344	Hydrazine, methyl-	1*	4	P068	A		(4.54)
Methyl iodide	74884	Methane, iodo-	1*	4	U138	8		(45.4)
Methyl isobutyl ketone	108101	4-Methyl-2-pentanone	1* 1*	4 3,4	U161 P064	D A		(2270) (4.54)
Methyl isocyanate 2-Methyllactonitrile	624839 75865	Methane, isocyanato- Acetone cyanohydrin Propanenitrile, 2- hydroxy-2-methyl-	10	1,4	P069	Â	10	(4.54)
Methylmercaptan	74931	Methanethiol Thiomethanol	100	1,4	U153	В		(45.4)
Methyl methacrylate	80626	2-Propenoic acid, 2- methyl-, methyl ester	5000	1,4	U162	С	1000	(454)
Methyl parathion	298000	Phosphorothioic acid, O,D-dimethyl O-(4- nitrophenyl) ester	100	1,4	P071	8	100	(45.4)
4-Methyl-2-pentanone	108101	Methyl isobutyl ketone	1*	4	U161	D		(2270)
Methylthiouracil	56042	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl- 2-thioxo-	1*	4	U164	A		(4.54)
Mevinphos	7786347		1	1		A		(4.54)
Mexacarbate Mitomycin C	315184 50077	Azirino[2',3':3,4]	1000 1*	1	U010	C A		(454) (4.54)
		pyrrolo[1,2-a] indole-4,7-dione,6- amino-8- [[(aminocarbonyl)oxy] methyl]- 1,1a,2,8,8a,8b- hexahydro-8a- methoxy-5-methyl-, [1aS-(1aalpha,8beta, 8aalpha,8balpha)]-						
MNNG	70257	Guanidine, N-methyl-N' -nitro-N-nitroso-	1*	4	U163	A -		(4.54)
Monoethylamine	75047		1000	1		8		(45.4)
Monomethylamine Multi Source Leachate	74895		1000 1*	1	F039	B X		(45.4) (0.454

				FI		_ (-	ommucu)
luscimol	2763964	3(2H)-Isoxazolone, 5-(aminomethyl)- 5-(Aminomethyl)-3-	1*	4	P007	С	1000 (454)
-1	300765	isoxazolol	10	1			10 (4.54)
aled ,12-Naphthacenedione, 8-acetyl-10-[3-amino- 2,3,6-trideoxy-alpha-L- lyxo-hexopyranosyl)oxy]- 7,8,9,10-tetrahydro- 6,8,11-trihydroxy-	20830813	Daunomycin	10 1*	4	u059	Å	10 (4.54)
1-methoxy-,(85-cis)- 1-Naphthalenamine	134327	alpha-Naphthylamine	1*	4	U167	В	100 (45.4
2-Naphthalenamine	91598	beta-Naphthylamine	1*	4	U168	Ā	10 (4.54
Naphthalenamine, N,N1- bis(2-chloroethyl)-	494031	Chlornaphazine	1*	4	U026	В	100 (45.4
Naph tha Lene	91203		5000	1,2,4	U165	В	100 (45.4
Naphthalene, 2-chloro-	91587	beta-Chloronaphthalene 2-Chloronaphthalene	1*	2,4	U047	D	5000 (2270
1,4-Naphthalenedione	130154	1,4-Naphthoquinone	1*	4	U166	D	5000 (2270
2,7- Naphthalenedisulfonic acid, 3,3'-[(3,3'- dimethyl-(1,1'- biphenyl)-4,4'-diyl)- bis(azo)]bis(5-amino- 4-hydroxy)-	72571	Trypen blue	1*	4	U236	<b>A</b>	10 (4.54
tetrasodium salt. Nachthenic acid	1338245		100	1		8	100 4/5 /
1,4-Naphthoquinone	130154	1.4-Naphthalenedione	1*	4	U166	D	100 (45.4 5000 (2270
alpha-Naphthylamine	134327	1-Naphthalenamine	1*	4	U167	В	100 (45.4
beta-Naphthylamine	91598	2-Naphthalenamine	1*	4	U168	Ā	10 (4.54
alpha-Naphthylthiourea	86884	Thiourea, 1-naphthalenyl-	1*	4	P072	В	100 (45.4
Nickel #	7440020		1*	2		В	100 (45.4
Nickel ammonium sulfate	15699180		5000	1		8	100 (45.4
NICKEL AND COMPCUNDS Nickel carbonyl	N.A. 13463393	Nickel carbonyl Ni(CO) 4,(T-4)-	1* 1*	2 4	P073	A	** 10 (4.54
Nickel carbonyl Ni(CO)4, (T-4)-	13463393	Nickel carbonyl	1*	4	P073	A	10 (4.5
Nickel chloride	7718549 37211055		5000	1		8	100 (45.4
Nickel cyanide	557197	Nickel cyanide Ni(CN)2	1*	4	P074	A	10 (4.54
Nickel cyanide Ni(CN)2	557197	Nickel cyanide	1*	4	P074	A	10 (4.5
Nickel hydroxide	12054487		1000	1		A	10 (4.5
Nickel nitrate	14216752		5000	1		8	100 (45.
Nickel sulfate	7786814	Deministra 7 (A marked	5000	1		В	100 (45.4
Nicotine, & salts	54115	Pyridine, 3-(1-methyl- 2-pyrrolidinyl)-,(S)-	1*	4	P0 <b>7</b> 5	В	100 (45.
Nitric acid	7697372	- p,,., ,,.,	1000	1		С	1000 (454
Nitric acid,	10102451	Thallium (I) nitrate	1*	4	U217	В	100 (45.
thallium (1+) salt	******						
Nitric oxide p-Nitroaniline	10102439 100016	Nitrogen oxide NO	1* 1*	4	P076	A	10 (4.5
Nitrobenzene	98953	Benzenamine, 4-nitro- Benzene, nitro-	1000	4 1,2,4	P077 U169	D C	5000 (227) 1000 (454
Nitrogen dioxide	10102440 10544726	Nitrogen oxide NO2	1000	1,4	P078	Ā	10 (4.5
Nitrogen oxide NO	10102439	Nitric oxide	1*	4	P076	Α	10 (4.5
Nitrogen oxide NO2	10102440 10544726	Nitrogen dioxide	1000	1,4	P078	A	10 (4.5
Nitroglycerine	55630	1,2,3-Propanetriol, trinitrate-	1*	4	P081	A	10 (4.5
Nitrophenol (mixed)	25154556		1000	1		8	100 (45.
m-Nitrophenol	554847					B	100 (45.
o-Nitrophenol p-Nitrophenol	88755 100027	2-Nitrophenol Phenol, 4-nitro-					
a Mitaesharal	007E E	4-Nitrophenol	1000	, ,		e	100 4/5
o-Nitrophenol p-Nitrophenol	88755 100027	2-Nitrophenol Phenol, 4-nitro- 4-Nitrophenol	1000 1000	1,2 1,2,4	U170	B B	100 (45. 100 (45.
2-Nitrophenol	88755	o-Nitrophenol	1000	1,2		8	100 (45.
4-Nitrophenot	100027	p-Nitrophenol Phenol, 4-nitro-	1000	1,2,4	U170	6	100 (45.
NITROPHENOLS	N.A.		1*	2			**
2-Nitropropane	79469	Propane, 2-nitro-	1* 1*	4 2	U171	A	10 (4.5
	N.A.						**

Appendix I - (continued)

				Appe	naix 1	- (co	ntinue	1)
N-Nitrosodi-n-	924163	1-Butanamine, N-butyl-	1*	4	U172	A	10	(4.54)
butylamine N-Nitrosodiethanol-	1116547	N-nitroso- Ethanol, 2,2'-	1*	4	U173	x	1	(0.454)
amine N-Nitrosodiethylamine	55185	(nitrosoimino)bis- Ethanamine, N-ethyl-	1*	4	U174	X	1	(0.454)
N-Nitrosodimethylamine	62759	N-nitroso- Methanamine, N-methyl- N-nitroso-	1*	2,4	P082	A	10	(4.54)
N-Nitrosodiphenylamine	86306	N 117 (1 0 0 0	1*	2		8	100	(45.4)
N-Nitroso-N-ethylurea	759739	Urea, N-ethyl-N-nitroso-	1*	4	U176	X	1	(0.454)
N-Nitroso-N-methylurea	684935	Urea, N-methyl-N- nitroso	1*	4	U177	X	1	(0.454)
N-Nitroso-N- methylurethane	615532	Carbamic acid, methylnitroso-, ethyl ester	1*	4	U178	X	1	(0.454)
N-Nitroso- methylvinylamine	4549400	Vinylamine, N-methyl- N-nitroso-	1*	4	P084	A	10	(4.54)
N-Nitrosopiperidine	100754	Piperidine, 1-nitroso-	1*	4	U179	A	10	(4.54)
N-Nitrosopyrrolidine	930552	Pyrrolidine, 1-nitroso-	1*	4	U180	X		(0.454)
Nitrotoluene	1321126		1000	1		C	1000	(454)
m-Nitrotoluene o-Nitrotoluene	99081 88722							
p-Nitrotoluene	99990							
5-Nitro-o-toluidine	99558	Benzenamine, 2-methyl- 5-nitro-	1*	4	U181	8	100	(45.4)
Octamethylpyro- phosphoramide	152169	Diphosphoramide, octamethyl-	1*	4	P085	В	100	(45.4)
Osmium oxide OsO4 (T-4)	20816120	Osmium tetroxide	1*	4	P087	С	1000	(454)
Osmium tetroxide	20816120	Osmium oxide Os04(T-4)-	1*	4	P087	Č	1000	
7-Oxabicyclo[2.2.1] heptane-2,3- dicarboxylic acid	145733	Endothall	1*	4	P088	С	1000	(454)
1,2-Oxathiolane, 2,2-dioxide	1120714	1,3-Propane sultone	1*	4	U193	A	10	(4.54)
2H-1,3,2- Oxazaphosphorin- 2-amine, N,N-bis(2-	50180	Cyclophosphamide	1*	4	U058	A	10	(4.54)
chloroethyl) tetrahydro-, 2-oxide								
Oxirane	75218	Ethylene oxide	1*	4	U115	A	10	(4.54)
Oxiranecarboxyaldehyde	765344	Glycidylaldehyde	1*	4	U126	Ä		(4.54)
Oxirane, (chloro- methyl)-	106898	Epichlorohydrin	1000	1,4	U041	8	100	(45.4)
Paraformal dehyde	30525894		1000	1		C	1000	(454)
Paraldehyde	123637	1,3,5-Trioxane,	1*	4	U182	C		(454)
Parathion	56382	2,4,6-trimethyl- Phosphorothioic acid, O,O-diethyl O-	1	1,4	P0 <b>89</b>	A	10	(4.54)
Pentachlorobenzene	608935	(4-nitrophenyl) ester Benzene, pentachloro-	4.0	,				
Pentachloroethane	76017	Ethane, pentachloro-	1* 1*	4	U183 U184	Å	10	(4.54)
Pentachloronitrobenzene	82688	Benzene,	i*	4	U185	B		(4.54) (45.4)
(PCNB)		pentachloronitro-	-		3,00	_	,,,,	(43.47
Pentachlorophenol	87865	Phenol, pentachloro-	10	1,2,4	U242	A	10	(4.54)
1,3-Pentadiene Perchloroethylene	504609 127184	1-Methylbutadiene	1*	4	U186	8		(45.4)
res circul occury tene	127104	Ethene, tetrachloro- Tetrachloro- ethene	1*	2,4	U210	8	100	(45.4)
Phenacetin	62442	Tetrachloroethylene Acetamide, N-	1*	4	U187	8	100	(45.4)
Phenanthrene	85018	(4-ethoxyphenyl)-	1*	2		D	5000	(2270)
Phenol	108952	Benzene, hydroxy-	1000	1,2,4	U188	C		(2270) (454)
Phenol, 2-chloro-	95578	o-Chlorophenol	1*	2,4	U048	B		(45.4)
Phenol, 4-chloro-3-	59507	2-Chlorophenol p-Chloro-m-cresol	1*	2,4	U0 <b>39</b>	Đ		(2270)
methyl- Phenol, 2-cyclohexyl-	131895	4-Chloro-m-cresol 2-Cyclohexyl-4,6-	1*	4	P034	В		(45.4)
4,6-dinitro- Phenol, 2,4-dichloro-	120832	dinitrophenol						
Phenol, 2,6-dichloro-	87650	2,4-Dichlorophenol 2,6-Dichlorophenol	1* 1*	2,4 4	U081	В		(45.4)
Phenol, 4,4'-(1,2- diethyl-1,2-ethene- diyl)bis-,(E)	56531	Diethylstilbestrol	1*	4	U082 U089	8 X		(45.4) (0.454)
Phenol, 2,4-dimethyl-	105679	2,4-Dimethylphenol	1*	2,4	U101	8	100	(45.4)
Phenol, 2,4-dinitro-	51285	2,4-Dinitrophenol	1000	1.2.4	P048	Ā		(4.54)

	Appendix 1 - (continued)							icu)
Phenol, methyl-	1319773	Cresol(s) Cresylic	1000	1,4	U052	C	1000	(454)
m-Cresol	108394	m-Cresylic acid						
o-Cresol	95487	o-Gresylic acid						
p-Cresol	106445	p-Cresylic acid		• •	2017			
Phenol, 2-methyl-4,6- dinitro-	534521	4,6-Dinitro-o-cresol and salts	1*	2,4	P047	A	10	(4.54)
henoi, 2,2'-methyl-	70304	Hexachiorophene	1*	4	U132	8	100	(45.4)
enebis (3,4,6-	,	поласт ориала	•	•		-		•
trichloro-	****	<b>~1</b>	4.4				4444	44045
henol, 2-(1-methyl- propyl)-4,6-dinitro	88857	Dinoseb	1*	4	P020	C	1000	(454)
Phenol, 4-nitro-	100027	p-Nitrophenol	1000	1,2,4	U170	8	100	(45.4)
		4-Nitrophenol				-		
Phenol, pentachloro-	87865	Pentachlorophenol	10	1,2,4	U242	A	10	(4.54)
henol, 2,3,4,6-	58902	2,3,4,6-	1*	4	U212	A	10	(4.54)
tetrachloro-	arae.	Tetrachlorophenol	40	• ,	11970		40	// E/\
henol, 2,4,5- trichloro-	95954	2,4,5-Trichlorophenol	10	1,4	<b>U23</b> 0	A	10	(4.54)
Phenol, 2,4,6-	88062	2,4,6-Trichlorophenol	10	1,2,4	U231	A	10	(4.54)
trichloro-	00002	£,4,0 11 felitor optienot		11617	0631	^	10	(4.34)
Phenol, 2,4,6-	131748	Ammonium picrate	1*	4	P009	A	10	(4.54)
trinitro-,								
ammonium salt	148823	Melphalan	1*	4	U150	v	•	10 154
-Phenylalanine,4-(bis (2-chloroethyl)aminol)	140063	nechiacan	1	•	0130	X	,	(0.454)
1,10-(1,2-	193395	Indeno(1,2,3-cd)pyrene	1*	2,4	U137	8	100	(45.4)
Phenylene)pyrene								
henylmercury acetate	62384	Mercury, (acetato-0)	1*	4	P092	8	100	(45.4)
Phenyl thioures	103855	phenyl- Thiourea, phenyl-	1*	4	P093	8	100	(45.4)
Phorate	298022	Phosphorodithioic acid, 0,0-diethyl S-(ethylthio),	3*	4	P094	Å		(4.54)
		methyl ester						
Phosgene	75445	Carbonic dichloride	5000	1,4	P095	A		(4.54)
Phosphine Phosphoric acid	7803512 7664382		1* 5000	1	P096	<b>8</b> D		(45.4) (2270)
Phosphoric acid, diethyl 4-nitrophenyl ester	311455	Diethyl-p-nitrophenyl phosphate	1*	4	P041	8		(45.4)
Phosphoric acid, lead(2+) salt (2:3)	7446277	Lead phosphate	1*	4	U145	A	10	(4.54)
Phosphorodithioic	298044	Disulfaton	1	1,4	P039	x	1	(0.454
acid, O,O-diethyl S- [2-(ethylthio)ethyl] ester				•				
Phosphorodithioic acid, 0,0-diethyl S-(ethylthio),	298022	Phorate	1*	4	P094	A	10	(4.54)
methyl ester								
Phosphorodithioic	3288582	O,O-Diethyl S-methyl	1*	4	U087	D	5000	(2270)
acid, 0,0-diethyl S-		dithiophosphate						
methyl ester Phosphorodithioic acid,	60515	Dimethoate	1*	4	P044	A	10	(4.54)
0,0-dimethyl S- [2(methylamino)-	00313	D IIIGENIOUEG	•	•	F044	^	10	(7.37)
2-oxoethyl] ester Phosphorofluoridic	55914	Diisopropyl-	1*	4	P043	8	100	(45.4)
acid, bis(1-	22714	fluorophosphate	• • •	₹	FU43	9	100	143.47
methylethyl) ester				1,4	P089	A	10	(4.54)
Phosphorothioic acid,	56382	Parathion	1	.,-				
Phosphorothicic acid, O,O-diethyl O-	56382	Parathion	1	.,-				
Phosphorothicic acid, O,O-diethyl O- (4-nitrophenyl) ester Phosphorothicic acid, O,[4-[(dimethyl amino) sulfonyl]	56382 52857	Parathion Famphur	1*	4	P097	С	1000	(454)
Phosphorothicic acid, 0,0-diethyl 0- (4-nitrophenyl) ester Phosphorothicic acid, 0,[4-[(dimethyl amino) sulfonyl] phenyl]0,0-dimethyl				•	P097	С	1000	(454)
Phosphorothicic acid, 0,0-diethyl 0- (4-nitrophenyl) ester Phosphorothicic acid, 0,[4-[(dimethyl amino) sulfonyl] phenyl]0,0-dimethyl ester	52857	Famphur	1*	4				
Phosphorothicic acid, 0,0-diethyl 0- (4-nitrophenyl) ester Phosphorothicic acid, 0,[4-[(dimethyl amino) sulfonyl] phenyl]0,0-dimethyl ester				•	P097	С		
Phosphorothioic acid, O,O-diethyl O- (4-nitrophenyl) ester Phosphorothioic acid, O,[4-[(dimethyl amino) sulfonyl] phenyl]O,O-dimethyl ester Phosphorothioic acid, O,O-dimethyl O-(4- nitrophenyl) ester	52857 298000	Famphur Methyl parathion	1* 100	1,4	P071			
Phosphorothioic acid, 0,0-diethyl 0- (4-nitrophenyl) ester Phosphorothioic acid, 0,(4-[(dimethyl amino) sulfonyl] phenyl]0,0-dimethyl ester Phosphorothioic acid, 0,0-dimethyl 0-(4-	52857	Famphur	1*	4			100	(454) (45.4) (45.4)

Appendix I - (continued)

				App	MULLA A	- (60)	Tritine	
Phosphorus	7723140		1	1		х	1	(0.454)
Phosphorus oxychloride	10025873		5000	1		C	1000	(454)
Phosphorus	1314803	Phosphorus sulfide	100	1,4	U1 <b>89</b>	8	100	(45.4)
pentasulfide Phosphorus sulfide	1314803	Sulfur phosphide	100	4 /			400	
mosphiol de succide	1314003	Phosphorus pentasulfide Sulfur phosphide	100	1,4	U189	8	100	(45.4)
Phosphorus	7719122	out ful phosphiles	5000	1		C	1000	(454)
trichloride				_				
PHTHALATE ESTERS Phthalic enhydride	N.A. 85449	1.3-Isobenzofurandione	1*	2		_	**	
2-Picoline	109068	Pyridine, 2-methyl-	1* 1*	4	U190 U191	D D		(2270) (2270)
iperidine, 1-nitroso-	100754	N-Nitrosopiperidine	1*	7	U179	Ă		(4.54)
Plumbane, tetraethyl-	78002	Tetraethyl lead	100	1,4	P110	Ä		(4.54)
POLYCHLORINATED	1336363		10	1,2		X	1	(0.454)
BIPHENYLS (PCBs) Aroclor 1016	12674112	POLYCHLORINATED BIPHENYLS						
AI OCTOI TOTO	12074112	(PCBs)						
Arociar 1221	11104282	POLYCHLORINATED BIPHENYLS (PCBs)						
Aroclor 1232	11141165	POLYCHLORINATED BIPHENYLS (PCBs)						
Aroctor 1242	53469219	POLYCHLORINATED BIPHENYLS (PCBs)						
Aroctor 1248	12672296	POLYCHLORINATED BIPHENYLS (PCBs)						
Aroclor 1254	11097691	POLYCHLORINATED BIPHENYLS (PCBs)						
Aroclor 1260	11096825	POLYCHLORINATED BIPHENYLS (PCBs)						
POLYNUCLEAR AROMATIC HYDROCARBONS.	N.A.	(1-000)	1*	2			**	
Potassium arsenate	7784410		1000	1		x	1	(0.454)
Potassium arsenite	10124502		1000	i		x		(0.454)
Potassium bichromate	7778509		1000	1		Ä		(4.54)
Potassium chromate	7789006		1000	1		A	10	(4.54)
Potassium cyanide	151508	Potassium cyanide K (CN)	10	1,4	P098	Ą		(4.54)
Potassium cyanide K(CN) Potassium hydroxide	151508 1310583	Potassium cyanide	10 1000	1,4	P098	A		(4.54)
Potassium permanganate	7722647		100	i		C 8		(454) (45.4)
Potassium silver cyanide	506616	Argentate (1-), bis(cyano-C)-,	1*	4	P099	x		(0.454)
Nana-data	22050585	potassium	44					
Pronamide	23950585	Benzamide, 3,5-dichloro-N-(1,1-	1*	4	U192	D	5000	(2270)
Propanal, 2-methyl-2-	116063	dimethyl-2-propynyl)- Aldicarb	1*		0070			
(methylthio)-, O-	110003	VIGICALD	1-	4	P070	X	1	(0.454)
[(methylamino) carbonyl] oxime								
1-Propanamine	107108	n-Propylamine	1*	4	U194	D	5000	(2270)
1-Propanamine,	142847	Dipropylamine	1*	4	U110	D		(2270)
N-propyl- 1-Propanamine,	621647	Di-n-propylnitrosamine	1*	2,4	U111	A	10	(4.54)
N-nitroso-	OL 1047	bi ii pi opytiiiti osaaliille	F	-,-	0111	^	10	(4.34)
N-propyl-								
Propane, 1,2-dibromo-	96128	1,2-Dibromo-3-	1*	4	U066	X	1	(0.454)
3-chloro-	79469	chloropropane 2-Nitropropane	1*	,	11474		40	44 545
Propane, 2-nitro- 1,3-Propane sultone	1120714	1,2.0xathiolane,	1*	4	U171 U193	A		(4.54) (4.54)
Type Tropanie Sattana	1125.14	2,2-dioxide	•	•	0173	^	,,,	(4.34)
Propane, 1,2-dichloro-	78875	Propylene dichloride	5000	1,2,4	u083	C	1000	(454)
	400777	1,2-Dichloropropane						
Propanedinitrile Propanenitrile	109773 107120	Malononitrile Ethyl cyanide	1*	4	U149 P101	C		(454)
Propanenitrite Propanenitrile,	542767	3-Chloropropionitrile	1*	2	P101	A C		(4.54) (454)
3-chloro-	342.0.	a direct opt optonict tee	•	•	FUET	·	1000	(424)
Propanenitrile,	75865	Acetone cyanohydrin	10	1,4	P069	A	10	(4.54)
2-hydroxy-2-methyl- Propane, 2,2'oxybis	108601	2-Methyllactonitrile Dichloroisopropyl ether	1*	2,4	U027	С	1000	(454)
[2-chloro- 1,2,3-Propanetriol,	55630	Nitroglycerine	1*	4	P081	A	10	(4.54)
trinitrate-	40/707	*-1-49 9 dib				_		
1-Propanol, 2,3-	126727	Tris(2,3-dibromopropyl)	1*	4	U2 <b>3</b> 5	A	10	(4.54)
dibromo-, phosphate		phosphate						
dibromo-, phosphate (3:1)	78831	phosphate Isobutyl alcohol	1*	4	u140	D	5000	(2270)
dibromo-, phosphate	78831 67641 598312	•	1* 1* 1*	4	U140 U002	D D		(2270) (2270)

				,-F.F.				
Propergite	2312358		10	1		A	10	(4.54)
Propergyl alcohol	107197	2-Propyn-1-ol	1*	4	P102	Ĉ		(454)
2-Propensi	107028	Acrolein	1	1,2,4	P003	X	1	(0.454)
2-Propenamide	79061	Acrylamide	1*	4	U007	D		(2270)
1-Propene, 1,1,2,3,	1888717	Hexach Loropropene	1*	4	U243	C	1000	(454)
3,3-hexachloro-			***			_	444	
1-Propene, 1,3-	542756	1,3-Dichloropropene	5000	1,2,4	U084	8	100	(45.4)
dichioro-	107131	Acrylonitr;le	100	1,2,4	U009	8	100	(45.4)
2-Propenenitrile 2-Propenenitrile,	126987	Methacrylonitrile	1*	4.6,4	U152	Č		(454)
2-methyl-	120701	Hether years its	•	•	0126	•	,000	****
2-Propenoic acid	79107	Acrylic acid	1*	4	8000	D	5000	(2270)
2-Propenoic acid,	140885	Ethyl acrylate	1*	4	U113	C		(454)
ethyl ester								
2-Propenoic scid,	97632	Ethyl methacrylate	1*	4	U118	C	1000	(454)
2-methyl-, ethyl ester	00101	Market and a second as				_	4000	
2-Propenoic acid,	80626	Methyl methacrylate	5000	1,4	U162	С	1000	(454)
2-methyl-, methyl								
ester 2-Propen-1-ol	107186	Allyl alcohol	100	1,4	P005	8	100	(45.4)
Propionic acid	79094	Actyl account	5000	i'	7003	ō		(2270)
Propionic acid,	93721	Silvex (2,4,5-TP)	100	1,4	U233	8		(45.4)
•	,,,,,	• • •		•,•		_		******
2-(2,4,5-		2,4,5-TP acid						
trichlorophenoxy)- Propionic anhydride	123626		5000				2000	/2270x
n-Propylamine	107108	1-Propanamine	1*	1	u194	0		(2270) (2270)
• • • • • • • • • • • • • • • • • • • •		1 - Pr Openduitie	•	•	0174	U	2000	(22/0)
Propytene dichtoride	78875	Propane, 1,2-	5000	1,2,4	U083	C	1000	(454)
		dichtoro-						
Propylene oxide	75569	1,2-Dichloropropane	F000			_		
1,2-Propylenimine	75558	Aziridine, 2-methyl-	5000 1*	1	2017	8		(45.4)
2-Propyn-1-ol	107197	Propargyl alcohol	*	4	P067 P102	X		(0.454)
Pyrene	129000	rioper gyt accondi	10	ž	PIUZ	D		(454) (2270)
Pyrethrins	121299		1000	ī		X		(0.454)
	121211			·		••	•	1017017
	8003347							
3,6-Pyridazinadione,	123331	Maleic hydrazide	1*	4	U148	D	5000	(2270)
1,2-dihydro-	201012							
4-Pyridinamine Pyridine	504245 110861	4-Aminopyridine	1*	4	P008	Ç		(454)
Pyridine, 2-methyl-	109068	2-Picoline	1* 1*	4	U196	C		(454)
Pyridine, 3-(1-methyl-	54115	Nicotine, & salts	1*	4	U191 P075	0 B		(2270)
2-pyrrolidinyl)-,(\$)	-41,5	micotine, a such	•	•	PUIS	D	100	(45.4)
2,4-(1H,3H)-Pyrimidinedione,	66751	Uracil mustard	1*	4	U237	A	10	(4.54)
5-[bis(2-chloroethyl)amino]-								(400 )
4(1H)-Pyrimidinone,	56042	Methylthiouracil	1*	4	U164	A	10	(4.54)
2,3-dihydro-6-								
methyl-2-thioxo- Pyrrolidine.	930552	N-Minney						
1-nitroso-	<b>430332</b>	N-Nitrosopyrrolidine	1*	4	U180	X	1	(0.454)
Quinoline	91225		1000	1		D	E000	(2270)
RADIONUCLIDES	N.A.		1*	3		U	) ^(	
Reserpine	50555	Yohimban-16-carboxylic	j*	ž	U200	D		(2270)
•		acid, 11,17-dimethoxy-	,	•			2000	(22,0)
		18- ((3,4,5-						
		trimethoxybenzoyl)oxy-,						
		methyl ester (3beta,						
		16beta, 17alpha, 18beta,						
Resorcinol	108463	20alpha) - 1,3-Benzenediol	1000	4.4	U201		5000	
Saccharin and salts	81072	1,2-Benzisothiazol-	1*	1,4	U202	D B		(2270) (45.4)
	0.0.0	3(2H)-one, 1,1-dioxide	•	•	UEUE		100	(42.4)
Safrole	94597	1,3-Benzodioxole,	1*	4	U203	В	100	(45.4)
		5-(2-propenyl)-				-		,,,,,,
Selenious acid	7783008		1*	4	U204	A	10	(4.54)
Selenious acid,	12039520	Thatlium selenite	1*	4	P114	C		(454)
dithallium (1+) salt	7707/02		4.4	_		_		
Selenium ++ SELENIUM AND COMPOUNDS	7782492		1*	2		В		(45.4)
Selenium dioxide	N.A. 7446084	Selenium oxide	1*	2	11201		**	
Selenium oxide	7446084	Selenium oxide Selenium dioxide	1000 1000	1,4	U204	Ą		(4.54)
Selenium sulfide	7488564	Selenium sulfide SeS2	1*	1,4	U204 U205	A		(4.54) (4.54)
Selenium sulfide SeS2	7488564	Selenium sulfide	1*	4	U205	Â		(4.54)
			•					
Selenourea	630104		1*	4	2105	Ľ	1000	(656)
Selenourea L-Serine, diazoacetate	630104 115026	Azaserine	1*	4	P103 U015	C X		(454) (0.454)

Silver ++	7440224		1*	2		C	1000 (454)
SILVER AND COMPOUNDS	N.A.		1*	2			**
Silver cyanide	506649	Silver cyanide Ag (CN)	1*	4	P104	X	1 (0.454)
Silver cyanide Ag (CN)	506649	Silver cyanide	1*	4	P104	X	1 (0.454)
Silver nitrate Silvex (2,4,5-TP)	7761888 93721	Dramiania said 2./2	1 100	1 1,4	U233	X B	1 (0.454)
\$11V8X (2,4,5"1P)	73761	Propionic acid, 2-(2, 4,5-trichlorophenoxy)-	100	3,4	0233	•	100 (45.4)
Sodium	7440235	2,4,5-TP acid	1000	1		A	10 (4.54)
Sodium arsenate	7631892		1000	i		x	1 (0.454)
Sodium arsenite	7784465		1000	1		X	1 (0.454)
Sodium azide	26628228		1*	4	P105	Ç	1000 (454)
Sodium bichromate	10588019		1000 5000	1		Ÿ	10 (4.54)
Sodium bifluoride Sodium bisulfite	1333831 7631905		5000	1		8 D	100 (45.4) 5000 (2270)
Sodium chromate	7775113		1000	i		Ă	10 (4.54)
Sodium cyanide	143339	Sodium cyanide Na (CN)	10	1,4	P106	A	10 (4.54)
Sodium cyanide Na (CN)	143339	Sodium cyanide	10	1,4	P106	A	10 (4.54)
Sodium dodecyl-	25155300		1000	1		C	1000 (454)
benzenesulfonate Sodium fluoride	7681494		5000	1		С	1000 (454)
Sodium hydrosulfide	16721805		5000	i		Ď	5000 (2270)
Sodium hydroxide	1310732		1000	1		C	1000 (454)
Sodium hypochlorite	7681529		100	1		B	100 (45.4)
Sadium mashulasa	10022705		1000	1		•	1000 4/5/3
Sodium methylate Sodium nitrite	124414 76 <b>32</b> 000		100	i		C B	1000 (454) 100 (45.4)
Sodium phosphate, dibasic	7558794		5000	i		Ď	5000 (2270)
•	10039324						•
	10140655		****			_	
Sodium phosphate, tribasic	7601549 775 <b>8</b> 294		5000	1		D	5000 (2270)
	7785844						
	10101890						
	10124568						
	10361894			_		_	***
Sodium selenite	10102188 77 <b>8</b> 2823		1000	1		8	100 (45.4)
Streptozotocin	18883664	D-Glucose, 2-deoxy-2-	1*	4	U206	×	1 (0.454)
		[[(methylnitroso-	•	•		••	. ,
		amino)-carbonyl]amino]-					
		Glucopyranose, 2-					
		Glucopyranose, 2- deoxy-2-(3-methyl-3-					
Strontium chromate	7789062	Glucopyranose, 2-	1000	1		A	10 (4.54)
Strontium chromate Strychnidin-10-one	57249	Glucopyranose, 2- deoxy-2-(3-methyl-3-	10	1 1,4	P108	A A	10 (4.54) 10 (4.54)
Strychnidin-10-one Strychnidin-10-one,		Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)-			P108 P018		
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy-	57249 357573	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)- Strychnine, & salts Brucine	10 1*	1,4	P018	A B	10 (4.54) 100 (45.4)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts	57249 357573 57249	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)- Strychnine, & salts	10 1*	1,4		A B	10 (4.54) 100 (45.4) 10 (4.54)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts Styrene	57249 357573	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)- Strychnine, & salts Brucine	10 1*	1,4	P018	A B	10 (4.54) 100 (45.4) 10 (4.54) 1000 (454)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts	57249 357573 57249 100425	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)- Strychnine, & salts Brucine Strychnidin-10-one	10 1* 10 1000	1,4	P018	A B A C	10 (4.54) 100 (45.4) 10 (4.54)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts Styrene Sulfur monochloride Sulfur phosphide	57249 357573 57249 100425 12771083 1314803	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)- Strychnine, & salts Brucine Strychnidin-10-one	10 1* 10 1000 1000 1000	1,4	P018 P108	A B C C B	10 (4.54) 100 (45.4) 10 (4.54) 1000 (454) 1000 (454) 100 (45.4)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts Styrene Sulfur monochloride	57249 357573 57249 100425 12771083 1314803 7664939	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)- Strychnine, & salts Brucine Strychnidin-10-one	10 1* 10 1000 1000	1,4	P018 P108	A B A C C	10 (4.54) 100 (45.4) 10 (4.54) 1000 (454) 1000 (454)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts Styrene Sulfur monochloride Sulfur phosphide Sulfuric acid	57249 357573 57249 100425 12771083 1314803 7664939 8014957	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)- Strychnine, & salts Brucine Strychnidin-10-one Phosphorus pentasulfide Phosphorus sulfide	10 1* 10 1000 1000 1000 1000	1,4	P018 P108 U189	A B A C C B C	10 (4.54) 100 (45.4) 10 (4.54) 1000 (454) 1000 (454) 100 (45.4) 1000 (454)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts Styrene Sulfur monochloride Sulfur phosphide Sulfuric acid Sulfuric acid,	57249 357573 57249 100425 12771083 1314803 7664939 8014957 7446186	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)- Strychnine, & salts Brucine Strychnidin-10-one	10 1* 10 1000 1000 1000	1,4	P018 P108	A B C C B	10 (4.54) 100 (45.4) 10 (4.54) 1000 (454) 1000 (454) 100 (45.4)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts Styrene Sulfur monochloride Sulfur phosphide Sulfuric acid	57249 357573 57249 100425 12771083 1314803 7664939 8014957	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)- Strychnine, & salts Brucine Strychnidin-10-one Phosphorus pentasulfide Phosphorus sulfide	10 1* 10 1000 1000 1000 1000	1,4	P018 P108 U189	A B A C C B C	10 (4.54) 100 (45.4) 10 (4.54) 1000 (454) 1000 (454) 1000 (45.4) 1000 (454)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts Styrene Sulfur monochloride Sulfur phosphide  Sulfuric acid  Sulfuric acid, dithallium (1+) salt	57249 357573 57249 100425 12771083 1314803 7664939 8014957 7446186 10031591	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)- Strychnine, & salts Brucine Strychnidin-10-one Phosphorus pentasulfide Phosphorus sulfide Thallium(I) sulfate	10 1+ 10 1000 1000 1000 1000	1,4 1,4 1 1,4 1 1,4	P018 P108 U189 P115	A B A C C B B	10 (4.54) 100 (45.4) 10 (4.54) 1000 (454) 1000 (454) 100 (45.4) 1000 (454)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts Styrene Sulfur monochloride Sulfur phosphide  Sulfuric acid  Sulfuric acid, dithallium (1+) salt Sulfuric acid,	57249 357573 57249 100425 12771083 1314803 7664939 8014957 7446186 10031591	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)- Strychnine, & salts Brucine Strychnidin-10-one Phosphorus pentasulfide Phosphorus sulfide Thallium(I) sulfate Dimethyl sulfate Acetic acid, (2,4,5-	10 1+ 10 1000 1000 1000 1000	1,4 1,4 1 1,4 1 1,4	P018 P108 U189 P115	A B A C C B B	10 (4.54) 100 (45.4) 10 (4.54) 1000 (454) 1000 (454) 1000 (45.4) 1000 (454)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts Styrene Sulfur monochloride Sulfur phosphide  Sulfuric acid  Sulfuric acid, dithallium (1+) salt Sulfuric acid, dimethyl ester	57249 357573 57249 100425 12771083 1314803 7664939 8014957 7446186 10031591 77781	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)- Strychnine, & salts Brucine Strychnidin-10-one Phosphorus pentasulfide Phosphorus sulfide Thallium(I) sulfate Dimethyl sulfate Acetic acid, (2,4,5- trichlorophenoxy)	10 1* 10 1000 1000 1000 1000 1000	1,4 1,4 1 1,4 1 1,4 1	P018 P108 U189 P115 U103	A B A C C B B B	10 (4.54) 100 (45.4) 10 (4.54) 1000 (454) 1000 (454) 1000 (45.4) 1000 (45.4) 100 (45.4)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts Styrene Sulfur monochloride Sulfur phosphide  Sulfuric acid  Sulfuric acid, dithallium (1+) salt Sulfuric acid, dimethyl ester 2,4,5-T acid	57249 357573 57249 100425 12771083 1314803 7664939 8014957 7446186 10031591 77781	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)- Strychnine, & salts Brucine Strychnidin-10-one Phosphorus pentasulfide Phosphorus sulfide Thallium(I) sulfate Dimethyl sulfate Acetic acid, (2,4,5-	10 1* 10 1000 1000 1000 1000 1*	1,4 1,4 1 1,4 1 1,4 4	P018 P108 U189 P115 U103	A B A C C B B C C	10 (4.54) 100 (45.4) 10 (4.54) 1000 (454) 1000 (454) 1000 (45.4) 1000 (45.4) 1000 (45.4) 1000 (45.4)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts Styrene Sulfur monochloride Sulfur phosphide  Sulfuric acid  Sulfuric acid, dithallium (1+) salt Sulfuric acid, dimethyl ester	57249 357573 57249 100425 12771083 1314803 7664939 8014957 7446186 10031591 77781 93765	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)- Strychnine, & salts Brucine Strychnidin-10-one Phosphorus pentasulfide Phosphorus sulfide Thallium(I) sulfate Dimethyl sulfate Acetic acid, (2,4,5- trichlorophenoxy)	10 1* 10 1000 1000 1000 1000 1000	1,4 1,4 1 1,4 1 1,4 1	P018 P108 U189 P115 U103	A B A C C B B B	10 (4.54) 100 (45.4) 10 (4.54) 1000 (454) 1000 (454) 1000 (45.4) 1000 (45.4) 100 (45.4)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts Styrene Sulfur monochloride Sulfur phosphide  Sulfuric acid  Sulfuric acid, dithallium (1+) salt Sulfuric acid, dimethyl ester 2,4,5-T acid	57249 357573 57249 100425 12771083 1314803 7664939 8014957 7446186 10031591 77781	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)- Strychnine, & salts Brucine Strychnidin-10-one Phosphorus pentasulfide Phosphorus sulfide Thallium(I) sulfate Dimethyl sulfate Acetic acid, (2,4,5- trichlorophenoxy)	10 1* 10 1000 1000 1000 1000 1*	1,4 1,4 1 1,4 1 1,4 4	P018 P108 U189 P115 U103	A B A C C B B C C	10 (4.54) 100 (45.4) 10 (4.54) 1000 (454) 1000 (454) 1000 (45.4) 1000 (45.4) 1000 (45.4) 1000 (45.4)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts Styrene Sulfur monochloride Sulfur phosphide  Sulfuric acid  Sulfuric acid, dithallium (1+) salt Sulfuric acid, dimethyl ester 2,4,5-T acid	57249 357573 57249 100425 12771083 1314803 7664939 8014957 7446186 10031591 77781 93765 2008460 1319728 3813147 6369966	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)- Strychnine, & salts Brucine Strychnidin-10-one Phosphorus pentasulfide Phosphorus sulfide Thallium(I) sulfate Dimethyl sulfate Acetic acid, (2,4,5- trichlorophenoxy)	10 1* 10 1000 1000 1000 1000 1*	1,4 1,4 1 1,4 1 1,4 4	P018 P108 U189 P115 U103	A B A C C B B C C	10 (4.54) 100 (45.4) 10 (4.54) 1000 (454) 1000 (454) 1000 (45.4) 1000 (45.4) 1000 (45.4) 1000 (45.4)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts Styrene Sulfur monochloride Sulfur phosphide  Sulfuric acid  Sulfuric acid, dithallium (1+) salt Sulfuric acid, dimethyl ester 2,4,5-T acid  2,4,5-T amines	57249 357573 57249 100425 12771083 1314803 7664939 8014957 7446186 10031591 77781 93765 2008460 1319728 3813147 6369966 6369977	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)- Strychnine, & salts Brucine Strychnidin-10-one Phosphorus pentasulfide Phosphorus sulfide Thallium(I) sulfate Dimethyl sulfate Acetic acid, (2,4,5- trichlorophenoxy)	10 1+ 10 1000 1000 1000 1000 1+ 100	1,4 1,4 1 1,4 1 1,4 1 1,4	P018 P108 U189 P115 U103	A B A C C B B C D	10 (4.54) 100 (45.4) 10 (4.54) 1000 (454) 1000 (454) 1000 (45.4) 1000 (45.4) 1000 (45.4) 1000 (45.4) 5000 (2270)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts Styrene Sulfur monochloride Sulfur phosphide  Sulfuric acid  Sulfuric acid, dithallium (1+) salt Sulfuric acid, dimethyl ester 2,4,5-T acid	57249 357573 57249 100425 12771083 1314803 7664939 8014957 7446186 10031591 77781 93765 2008460 1319728 3813147 6369966 6369977 93798	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)- Strychnine, & salts Brucine Strychnidin-10-one Phosphorus pentasulfide Phosphorus sulfide Thallium(I) sulfate Dimethyl sulfate Acetic acid, (2,4,5- trichlorophenoxy)	10 1* 10 1000 1000 1000 1000 1*	1,4 1,4 1 1,4 1 1,4 4	P018 P108 U189 P115 U103	A B A C C B B C C	10 (4.54) 100 (45.4) 10 (4.54) 1000 (454) 1000 (454) 1000 (45.4) 1000 (45.4) 1000 (45.4) 1000 (45.4)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts Styrene Sulfur monochloride Sulfur phosphide  Sulfuric acid  Sulfuric acid, dithallium (1+) salt Sulfuric acid, dimethyl ester 2,4,5-T acid  2,4,5-T amines	57249 357573 57249 100425 12771083 1314803 7664939 8014957 7446186 10031591 77781 93765 2008460 1319728 3813147 6369966 6369977	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)- Strychnine, & salts Brucine Strychnidin-10-one Phosphorus pentasulfide Phosphorus sulfide Thallium(I) sulfate Dimethyl sulfate Acetic acid, (2,4,5- trichlorophenoxy)	10 1+ 10 1000 1000 1000 1000 1+ 100	1,4 1,4 1 1,4 1 1,4 1 1,4	P018 P108 U189 P115 U103	A B A C C B B C D	10 (4.54) 100 (45.4) 10 (4.54) 1000 (454) 1000 (454) 1000 (45.4) 1000 (45.4) 1000 (45.4) 1000 (45.4) 5000 (2270)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts Styrene Sulfur monochloride Sulfur phosphide  Sulfuric acid  Sulfuric acid, dithallium (1+) salt Sulfuric acid, dimethyl ester 2,4,5-T acid  2,4,5-T amines	57249 357573 57249 100425 12771083 1314803 7664939 8014957 7446186 10031591 77781 93765 2008460 1319728 3813147 6369966 6369977 93798 1928478 2545597 25168154	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)- Strychnine, & salts Brucine Strychnidin-10-one Phosphorus pentasulfide Phosphorus sulfide Thallium(I) sulfate Dimethyl sulfate Acetic acid, (2,4,5- trichlorophenoxy)	10 1+ 10 1000 1000 1000 1000 1+ 100	1,4 1,4 1 1,4 1 1,4 1 1,4	P018 P108 U189 P115 U103	A B A C C B B C D	10 (4.54) 100 (45.4) 10 (4.54) 1000 (454) 1000 (454) 1000 (45.4) 1000 (45.4) 1000 (45.4) 1000 (45.4) 5000 (2270)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts Styrene Sulfur monochloride Sulfur phosphide  Sulfuric acid Sulfuric acid, dithallium (1+) salt Sulfuric acid, dimethyl ester 2,4,5-T amines  2,4,5-T esters	57249 357573 57249 100425 12771083 1314803 7664939 8014957 7446186 10031591 77781 93765 2008460 1319728 3813147 6369966 6369977 93798 1928478 2545597 25168154 61792072	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)- Strychnine, & salts Brucine Strychnidin-10-one Phosphorus pentasulfide Phosphorus sulfide Thallium(I) sulfate Dimethyl sulfate Acetic acid, (2,4,5- trichlorophenoxy)	10 1+ 10 1000 1000 1000 1000 1+ 1000 1000	1,4 1,1 1,4 1 1,4 1 1,4 1 1,4	P018 P108 U189 P115 U103	A B A C C B B C D C	10 (4.54) 100 (45.4) 100 (454) 1000 (454) 1000 (454) 1000 (454) 1000 (45.4) 1000 (45.4) 1000 (454) 1000 (454) 1000 (454)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts Styrene Sulfur monochloride Sulfuric acid Sulfuric acid, dithallium (1+) salt Sulfuric acid, dimethyl ester 2,4,5-T acid  2,4,5-T amines  2,4,5-T salts	57249 357573 57249 100425 12771083 1314803 7664939 8014957 7446186 10031591 77781 93765 2008460 1319728 3813147 6369966 6369977 93798 1928478 2545597 25168154 61792072 13560991	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)-  Strychnine, & salts Brucine  Strychnidin-10-one  Phosphorus pentasulfide Phosphorus sulfide  Thallium(1) sulfate  Dimethyl sulfate  Acetic acid, (2,4,5- trichlorophenoxy) 2,4,5-T	10 1+ 10 1000 1000 1000 1000 1000 1+ 1000	1,4 1,1 1,4 1 1,4 1 1,4 1 1,4 1	P018 P108 U189 P115 U103 U232	A B A C C B B C D C C	10 (4.54) 100 (45.4) 100 (454) 1000 (454) 1000 (454) 1000 (454) 1000 (45.4) 1000 (45.4) 1000 (45.4) 1000 (454) 1000 (454)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts Styrene Sulfur monochloride Sulfur phosphide  Sulfuric acid Sulfuric acid, dithallium (1+) salt Sulfuric acid, dimethyl ester 2,4,5-T amines  2,4,5-T esters	57249 357573 57249 100425 12771083 1314803 7664939 8014957 7446186 10031591 77781 93765 2008460 1319728 3813147 6369966 6369977 93798 1928478 2545597 25168154 61792072	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)-  Strychnine, & salts Brucine  Strychnidin-10-one  Phosphorus pentasulfide Phosphorus sulfide  Thallium(I) sulfate  Dimethyl sulfate  Acetic acid, (2,4,5- trichlorophenoxy) 2,4,5-T	10 1+ 10 1000 1000 1000 1000 1+ 1000 1000	1,4 1,1 1,4 1 1,4 1 1,4 1 1,4	P018 P108 U189 P115 U103	A B A C C B B C D C	10 (4.54) 100 (45.4) 100 (454) 1000 (454) 1000 (454) 1000 (454) 1000 (45.4) 1000 (45.4) 1000 (454) 1000 (454) 1000 (454)
Strychnidin-10-one Strychnidin-10-one, 2,3-dimethoxy- Strychnine, & salts Styrene Sulfur monochloride Sulfuric acid Sulfuric acid, dithallium (1+) salt Sulfuric acid, dimethyl ester 2,4,5-T acid  2,4,5-T amines  2,4,5-T salts	57249 357573 57249 100425 12771083 1314803 7664939 8014957 7446186 10031591 77781 93765 2008460 1319728 3813147 6369966 6369977 93798 1928478 2545597 25168154 61792072 13560991	Glucopyranose, 2- deoxy-2-(3-methyl-3- nitrosoureido)-  Strychnine, & salts Brucine  Strychnidin-10-one  Phosphorus pentasulfide Phosphorus sulfide  Thallium(1) sulfate  Dimethyl sulfate  Acetic acid, (2,4,5- trichlorophenoxy) 2,4,5-T	10 1+ 10 1000 1000 1000 1000 1000 1+ 1000	1,4 1,1 1,4 1 1,4 1 1,4 1 1,4 1	P018 P108 U189 P115 U103 U232	A B A C C B B C D C C	10 (4.54) 100 (45.4) 100 (454) 1000 (454) 1000 (454) 1000 (454) 1000 (45.4) 1000 (45.4) 1000 (45.4) 1000 (454) 1000 (454)

				P1	enuix	- 10	01101110	
IDE	72548	Benzene, 1,1'-(2,2- dichloroethylidene) bis[4-chloro-	1	1,2,4	U060	X	1	(0.454)
		DDD 4,4' DDD						
1,2,4,5-Tetrachloro-	95943	Benzene, 1,2,4,5-	1*	4	U207	D	5000	(2270)
benzene 2,3,7,8-Tetrachloro-	1746016	tetrachioro-	1*	2		x	1	(0.454)
dibenzo-p-dioxin (TCDD) ,1,1,2-	630206	Ethane, 1,1,1,2-	1*	4	u208	В	100	(45.4)
Tetrachloroethane		tetrachloro-	•			_		
,1,2,2- Tetrachloroethane	79345	Ethane, 1,1,2,2- tetrachloro-	1*	2,4	u209	В	100	(45.4)
Tetrachloroethene	127184	Ethène, tetrachloro- Perchloroethylene Tetrachloroethylene	1*	2,4	U210	8	100	(45.4)
Tetrachioroethylene	127184	Ethene, tetrachloro- Perchloroethylene Tetrachloroethene	1*	2,4	U210	В	100	(45.4)
2,3,4,6-	58902	Phenol, 2,3,4,6-	1*	4	U212	A	10	(4.54)
Tetrachiorophenol	78002	tetrachloro-	100	1 /	D110		40	
Tetraethyl lead Tetraethyl-	107493	Plumbane, tetraethyl- Diphosphoric acid,	100	1,4 1,4	P110 P111	A		(4.54) (4.54)
pyrophosphate [etraethyldithiopyro-	3689245	tetraethyl ester Thiodiphosphoric acid,	1*	4	P109	В	100	(45.4)
phosphate Tetrahydrofuran	109999	tetraethyl ester Furan, tetrahydro-	1*	4	u213	С	1000	(454)
Tetranitromethane	509148	Methane, tetranitro-	j*	4	P112	Ä		(4.54)
Tetraphosphoric acid, hexaethyl ester	757584	Hexcethyl tetraphosphoate	1*	4	P062	8		(45.4)
Thallic oxide	1314325	Thallium oxide TI203	1*	4	P113	8	100	(45.4)
Thallium 🕂	7440280		1*	2		C	1000	(454)
THALLIUM AND COMPOUNDS	N.A.		1*	2			**	
hallium(I) acetate	563688	Acetic acid, thallium(1+) sait	1*	4	U214	В	100	(45.4)
Thailium(I) carbonate	6533739	Carbonic acid, dithallium(1+) salt	1*	4	U215	В	100	(45.4)
Thallium(") chloride	7791120	Thallium chloride TLCL	1*	4	U216	В	100	(45.4)
hallium chloride TICL	7791120	Thallium(I) chloride	1*	4	U216	В		(45.4)
Thallium(I) nitrate	10102451	Nitric acid, thallium(1+) salt	1*	4	U217	В	100	(45.4)
Thattium oxide T1203	1314325	Thallic oxide	1*	4	P113	8	100	(45.4)
hallium selenite	12039520	Selenious acid, dithal- lium(1+) salt	1*	4	P114	С	1000	(454)
hallium(I) sulfate	7446186 10031591	Sulfuric acid, dithallium(1+) salt	1000	1,4	P115	В	100	(45.4)
'hioacetamide	62555	Ethanethioamide	1*	4	U218	A	10	(4.54)
hiodiphosphoric acid, tetraethyl ester	3689245	Tetraethyldithiopyro- phosphate	1*	4	P109	8		(45.4)
Thiofanox	39196184	2-Butanone, 3,3-dimethyl-1- (methylthio)-, O[(methylamino)	1*	4	P045	ß	100	(45.4)
Thioimidodicarbonic	541537	carbonyl) oxime Dithiobiuret	1*	4	P049	В	100	(45.4)
diamide [(H2N)C(S)] 2NH Thiomethanol	74931	Methanethiol	100	1 /	11457			
		Methylmercaptan		1,4	U153	В	100	(45.4)
Thioperoxydicarbonic diamide [(H2N)C(S)] 2S2, tetramethyl-	137268	Thiram	1*	4	U244	A	10	(4.54)
Thiophenol	108985	Benzenethiol	1*	4	P014	8	100	(45.4)
Thiosemicarbazide Thiourea	79196 62566	Hydrazinecarbothioamide	1* 1*	4	P116	В		(45.4)
Thiourea,	5344821	1-(a-Chiorophenyi)	1*	4	U219 P026	A B		(4.54) (45.4)
(2-chlorophenyl)-		thiourea				-		(73.7)
Thiourea, 1-naphthalenyl-	86884	alpha-Naphthylthiourea	1*	4	P072	8	100	(45.4)
Thiourea, phenyl-	103855	Phenyl thiourea	1*	4	P093	8	100	(45.4)
Thiram	137268	Thioperoxydicarbonic diamide [(H2N)C(S)] 2S2, tetramethyl-	1*	4	U244	A		(4.54)
Toluene	108883	Benzene, methyl-	1000	1,2,4	u220	С	1000	(454)
Toluenediamine	95807 496720 823405 25376458	Benzenediamine, ar- methyl-	1*	4	U221	Å		(4.54)

				whhe	IIUIA .	(0	ontinued)
Toluene diisocyanate	584849	Benzene, 1,3-	1*	4	U223	В	100 (45.4)
	04007	diisocyanatomethyl-					
	91087 26471625						
o-Toluidine	95534	Benzenamine, 2-methyl-	1*	4	<b>U328</b>	8	100 (45.4)
p-Toluidin <del>e</del>	106490	Benzenamine, 4-methyl-	1*	4	U353	В	100 (45.4)
o-Toluidine	636215	Benzenamine, 2-methyl-,	1*	4	U222	В	100 (45.4)
hydrochloride		hydrochloride		40/	0437		4 40 1515
Toxaphene	8001352	Camphene, octachloro-	1* 100	1,2,4 1,4	P123 U233	X B	1 (0.454) 100 (45.4)
2,4,5-TP acid	93721	Propionic acid,	100	1,4	0233		100 (45.4)
		2-(2,4,5-trichloro- phenoxy)- Silvex (2,4,5-TP)					
2,4,5-TP esters	32534955	011101 (2)4/2 117	100	1		В	100 (45.4)
1H-1,2,4-Triazol- 3-amine	61825	Amitrole	1*	4	U011	Ä	10 (4.54)
Trichlorfon	52686		1000	1		В	100 (45.4)
1,2,4-Trichtorobenzene	120821		1*	2		В	100 (45.4)
1,1,1-Trichloroethane	71556	Ethane, 1,1,1-trichloro-	1*	2,4	U226	C	1000 (454)
1,1,2-Trichloroethane	79005	Methyl chloroform Ethane, 1,1,2-trichloro-	1*	2,4	U227	В	100 (45.4)
Trichloroethene	79016	Ethene, trichloro-	1000	1,2,4	U228	8	100 (45.4)
		Trichloroethylene					
Trichloroethylene	79016	Ethene, trichloro-	1000	1,2,4	U228	В	100 (45.4)
	50//27	Trichloroethene	4.	,	0440	•	100 4/E />
Trichloromethane- sulfenyl chloride	594423	Methanesulfenyl chloro-	1*	4	P118	8	100 (45.4)
Trichloromono-	75694	Methane,	1*	4	U121	D	5000 (2270)
fluoromethane		trichlorofluoro-	•	•		_	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Trichlorophenol	25167822		10	1		A	10 (4.54)
2,3,4-Trichlorophenol	15950660						
2,3,5-Trichlorophenol 2,3,6-Trichlorophenol	933788 933755						
2,4,5-Trichtorophenol	95954	Phenol, 2,4,5-trichloro-	10*	1,4	U230	A	10 (4.54)
2,4,6-Trichlorophenol	88062	Phenol, 2,4,6-trichloro-	10*	1,2,4	U231	Ä	10 (4.54)
3,4,5-Trichlorophenol	609198						
2,4,5-Trichlorophenol	95954	Phenol, 2,4,5-trichloro-	10*	1,4	U230	A	10 (4.54)
2,4,6-Trichlorophenol Triethanolamine dodecylbenzene-	880/32 27323417	Phenol, 2,4,6-trichloro-	10 1000	1,2,4 1	U231	C	10 (4.54) 1000 (454)
sulfonate	134//8		E000	•			E000 (2270)
Triethylamine Trimethylamine	121448 75503		5000 1000	1		D B	5000 (2270) 100 (45.4)
1,3,5-Trinitrobenzene	99354	Benzene, 1,3,5-	1*	4	U234	Ā	10 (4.54)
		trinitro-					
1,3,5-Trioxane,	123637	Paraldehyde	1*	4	U182	C	1000 (454)
2,4,6-trimethyl-	126727	1-Propanol, 2,3-	1*	4	u235	A	10 // 5/3
Tris(2,3-dibromopropyl) phosphate	120/21	dibromo-, phosphate [(3:1)	1	•	0235	^	10 (4.54)
Trypan blue	72571	2,7-	1*	4	U236	A	10 (4.54)
		Naphthalenedisulfonic acid, 3,3'-3,3'-dimethyl (1,1'-biphenyl)-4,4'-di bis(azo)]bis(5-amino-4- hydroxy)-tetrasodium sal	/L)-				
Unlisted Hazardous Wastes Characteristic	N.A.		1*	4	D002	В	100 (45.4)
of Corrosivity. Unlisted Hazardous	N.A.			4			
					0040		10 11 511
Benzene (D018)	N.A. N.A.		1000 1*	1,2,3,4 4	D018 D006	- A	10 (4.54) 10 (4.54)
Cadmium (D006) Carbon tetra-	N.A.		5000	1,2,4	D019	Â	10 (4.54)
chloride (D019)				.,-,			***************************************
Chiordane (D020)	N.A.		1	1,2,4	D020	X	1 (0.454)
Chlorobenzene (D021)	N.A.		100	1,2,4	D021	B	100 (45.4)
Chloroform (D022)	N.A. N.A.		5000 1*	1,2,4 4	D022 D007	A	10 (4.54) 10 (4.54)
Chromium (D007) o-Cresol (D023)	N.A.		1000	1,4	D007	Ĉ	1000 (454)
m-Cresol (D024)	N.A.		1000	1,4	D024	č	1000 (454)
p-Cresol (D025)	N.A.		1000	1,4	D025	Č	1000 (454)
Cresol (D026)	N.A.		1000	1,4	D026	C	1000 (454)
2,4-D (D016)	N.A.		100	1,4	D016	8	100 (45.4)
				17/	D027	В	100 (45.4)
1,4-Dichloro-	N.A.		100	1,2,4	0021		100 (43.4)
1,4-Dichloro- benzene (DO27) 1,2-Dichloro-	N.A.		5000	1,2,4	D028	В	100 (45.4)

			Appendix			IX I - (COMMINGE		icu)
1,1-Dichloro-	N.A.		5000	1,2,4	D029	8	100	(45.4)
ethylene (DO29)			4000		2070		40	
2,4-Dinitroto- luene (D030)	N.A.		1000	1,2,4	D030	A	10	(4.54)
Endrin (D012)	N.A.		1	1,4	D012	X	1	(0.454)
Heptachlor (and	N.A.		1	1,2,4	D031	X		(0.454)
epoxide) (D031)								
Hexach Loroben-	N.A.		1*	2,4	D032	Α	10	(4.54)
zene (D032)			44		-077			
Hexachloro- butadiene (DO33)	N.A.		1*	2,4	D033	X	1	(0.454)
Hexachloro-	N.A.		1*	2,4	D034	В	100	(45.4)
ethane (D034)	4.4.		•	-,7	0034		100	(73.7)
Lead (D008)	N.A.		1*	4	D008	A	10	(4.54)
Lindane (D013)	N.A.		1	1,4	D013	X		(0.454)
Mercury (D009)	N.A.		1*	4	D009	X	1	(0.454)
Methoxychlor (D014)	N.A.		1	1,4	D014	X		(0.454)
Methyl ethyl	N.A.		1*	4	D035	D	5000	(2270)
ketone (D035)	N A		1000	12/	0074	_	1000	//E/\
Nitrobenzene (D036) Pentachloro-	N.A. N.A.		1000 10	1,2,4	D036 D037	C A		(454) (4.54)
phenol (0037)	n.n.		ļŪ	1,2,4	0031	^	10	(4.24)
Pyridine (D038)	N.A.		1*	4	D038	С	1000	(454)
Selenium (D010)	N.A.		1*	4	D010	Ā		(4.54)
Silver (DO11)	N.A.		3*	4	D011	X		(0.454)
Tetrachloro-	N.A.		1*	2,4	D039	В	100	(45.4)
ethylene (D039)								
Toxaphene (D015)	N.A.		1	1,4	D015	X		(0.454)
Trichloro-	N.A.		1000	1,2,4	D040	8	100	(45.4)
ethylene (DO40) 2,4,5-Trichloro-	N.A.		10	1,4	D041	A	10	(4.54)
phenol (D041)	n.n.		10	1,4	0041	^	10	(4.34)
2,4,6-Trichloro-	N.A.		10	1,2,4	D042	A	10	(4.54)
phenol (D042)				.,-,		••		( ,
2,4,5-TP (D017)	N.A.		100	1,4	0017	8	100	(45.4)
Vinyl chloride (D043)	N.A.		1*	2,3,4	D043	X		(0.454)
nlisted Hazardous	N.A.		1*	4	D001	B	100	(45.4)
Wastes Characteristic								
of Ignitability.								
nlisted Hazardous	N.A.		1*	4	D003	8	100	(45.4)
Wastes Characteristic								
of Reactivity. racil mustard	66751	3 / /10 705 posini						
dere madeal d	50731	2,4-(1H,3H)-Pyrimi- dinedione, 5-[bis(2- chloroethyl)amino]-	1*	4	U237	A	10	(4.54)
ranyl acetate	541093	• • • • • • • • • • • • • • • • • • • •	5000	1		B	100	(45.4)
ranyl nitrate	10102064		5000	1		В		(45.4)
N -Ab-d N	36478769							
rea, N-ethyl-N-	759739	N-Nitroso-N-	1*	4	U176	X	1	(0.454)
nitroso- rea, N-methyl-N-	684935	ethylurea						
nitroso	004933	N-Nitroso-N- methylurea	1*	4	U177	X	1	(0.454)
anadic acid,	7803556	Ammonium vanadate	1*	4	P119	С	1000	11515
ammonium salt			•	•	F 1 1 F	·	1000	(434)
anadium oxide V205	1314621	Vanadium pentoxide	1000	1,4	P120	С	1000	(454)
anadium pentoxide	1314621	Vanadium oxide V205	1000	1,4	P120	C	1000	
anadyl sulfate	27774136		1000	1		C	1000	
inyl chloride	75014	Ethene, chloro-	1*	2,3,4	U043	X	1	(0.454)
inyl acetate inyl acetate monomer	108054 108054	Vinyl acetate monomer	1000	1		D		(2270)
inylamine, N-methyl-	4549400	Vinyl acetate N-Nitrosomethyl-	1000 1*	1	500/	D		(2270)
N-nitroso-	4347400	vinylamine	1	4	P0 <b>84</b>	A	10	(4.54)
inylidene chloride	75354	Ethene, 1,1-dichloro-	5000	1,2,4	U078	В	100	(45.4)
·		1,1-Dichloroethylene		1,2,4	0070	•	100	(43.4)
orfarin, and salts, when present at concentrations greater than 0.3%.	81812	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1- phenylbutyl)-, and saits, when present at	1*	4	P001	В	100	(45.4)
		concentrations greater than 0.3%						
lene (mixed)	1330207	Benzene, dimethyl	1000	1,4	U2 <b>39</b>	С	1000	(454)
m-Benzene, dimethyl	108383	m-Xylene		•				•
o-Benzene, dimethyl p-Benzene, dimethyl	95476 106423	o-Xylene						
tenol	1300716	p-Xylene	1000	•		•	4000	
= -	1300110		1000	1		С	1000	(434)

				A	hongiv		(00110111	
	50555	Reserpine	1*	4	U200	D	5000	(2270)
ohimban-16-carboxylic acid,11,17-dimethoxy-	20223	Reset Pille						
18-[(3,4,5-								
trimethoxybenzoyl)oxyl-,								
methyl ester (3beta,								
16beta, 17alpha, 18beta,								
20alpha)-				~		С	1000	(454)
Zinc +	7440666		1*	2		·	**	(424)
ZINC AND COMPOUNDS	N.A.		1*			С	1000	(454)
Zinc acetate	557346		1000	1		Č	1000	
Zinc ammonium chloride	52628258	•	5000	1		·	1000	(424)
<b>2</b> (1)	14639975							
	14639986		4000	1		С	1000	(454)
Zinc borate	1332076		1000	1		Č		(454)
Zinc bromide	7699458		5000 1000	i		č		(454)
Zinc carbonate	3486359					C		(454)
Zinc chloride	7646857		5000	1	P121	4		(4.54)
Zinc cyanide	557211	Zinc cyanide Zn(CN)2	10	1,4	P121	Â		(4.54)
Zinc cyanide Zn(CN)2	557211	Zinc cyanide	10	1,4	PIZI	ĉ		(454)
Zinc fluoride	7783495		1000	1		Č		(454)
Zinc formate	557415		1000	1		Č		(454)
Zinc hydrosulfite	7779864		1000 5000	i		Č		(454)
Zinc nitrate	7779886		5000	i		D		(2270)
Zinc phenolsulfonate	127822		1000	1,4	P122	В		(45.4)
Zinc phosphide	1314847	Zinc phosphide Zn3P2,	1000	1,4	7 7 60 60	_		•
Zille pilospili-		when present at						
		concentrations greater						
		than 10%	1000	1,4	P122	8	100	(45.4)
Zinc phosphide Zn3P2,	1314847	Zinc phosphide	1000	1,7				
when present at								
concentrations greater								
than 10%.	4.074740		5000	1		D		(2270)
Zinc silicofluoride	16871719		1000	1		C		(454)
Zinc sulfate	7733020 13746899		5000	1		D		(2270
Zirconium nitrate	16923958		5000	1		C	1000	(454)
Zirconium potassium	10723730							
fluoride	14644612		5000	1		D		(2270
Zirconium sulfate	10026116		5000	1		D	5000	(2270
Zirconium	10050110							
tetrachloride								

		İ		Statutory			Final RQ
Hazardous Substance	CASRN	Regulatory Synonyms	RQ	Code+	RCRA Waste No.	C A T.	Pounds (Kg)
OO1  The following spent halogenated solvents used in degreasing; all spent solvents mixtures/ blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the			1*	4	F001	A	10 (4.54)
above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.							
a) Tetrachloroethylene	127184		1*	2,4	U210	В	100 (45.4)
b) Trichloroethylene c) Methylene chloride	79016 75092		1000 1*	1,2,4 2,4	U228 U080	B C	100 (45.4) 1000 (454)
	71556		1*	2,4	U226	C	1000 (454) 1000 (454)
(d) 1,1,1-Trichloroethane (e) Carbon tetrachloride	56235		5000	1,2,4	U211	Ä	10 (4.54)
f) Chlorinated fluorocarbons	N.A.		1*	4	F002	D A	5000 (2270) 10 (4.54)
The following spent halogenated solvents; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of							
one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.							
(a) Tetrachloroethylene	127184		1*	2,4	U210	8	100 (45.4)
(b) Methylene chloride	75092		1*	2,4	U080	C	1000 (454)
(c) Trichloroethylene (d) 1,1,1-Trichloroethane	79016 71556		1000 1*	1,2,4 2,4	U228 U226	B C	100 (45.4) 1000 (454)
(e) Chlorobenzene	108907		100	1,2,4	U037	В	100 (45.4)
(f) 1,1,2-Trichloro-1,2,2- trifluoroethane	76131					D	5000 (2270)
(g) o-Dischlorobenzene (h) Trichlorofluoromethane	95501 75694		100 1*	1,2,4	U070 U121	B D	100 (45.4) 5000 (2270)
(i) 1,1,2-Thrichloroethane F003	79005		i* 1*	2,4	U227 F003	B B	100 (45.4) 100 (45.4)
The following spent non-halogenate solvents and the still bottoms from the recovery of these solvents:	d						
(a) Xylene	1330207					С	1000 (454)
(b) Acetone	67641					D	5000 (2270)
(c) Ethyl acetate (d) Ethylbenzene	141786 100414					D C	5000 (2270) 1000 (454)
(e) Ethyl ether	60297					8	100 (45.4)
(f) Methyl isobutyl ketone	108101					D	5000 (2270)
(g) n-Butyl alcohol	71363					D	5000 (2270)
(h) Cyclohexanone (i) Methanol	108941 67561					D D	5000 (2270) 5000 (2270)
F004			1*	4	F004	Č	1000 (454)
The following spent non-halogenate solvents and the still bottoms from the recovery of these solvents:	ed						
(a) Cresols/Cresylic acid	1319773		1000	1,4	U052	C	1000 (454)
(b) Nitrobenzene F005 The following spent non-halogenate	98953 ed		1000 1*	1,2,4	U169 F005	C B	1000 (454) 100 (45.4)
solvents and the still bottoms from the recovery of these solvents:	-						
(a) Toluene	108883		1000	1,2,4	U220	С	1000 (454)
(b) Methyl ethyl ketone	78933		1*	4	U159	D	5000 (2270)
(c) Carbon disulfide	75150		5000	1,4	P022	В	100 (45.4)

(d) Isobutanol (e) Pyridine	78831 110861	1* 1* 1*	4 4 4	U140 U196 F006	D C A	5000 (2270) 1000 (454) 10 (4.54)
F006 - Wastewater treatment sludges fro	am	•				
electroplating operations						
except from the following						
processes: (1) sulfuric acid						
anodizing of aluminum, (2) tin plating on carbon steel, (3) zi	nc 'r					
plating (segregated basis) on	•					
carbon steel, (4) aluminum or						
zinc-aluminum plating on carbon	1					
steel, (5) cleaning/stripping associated with tin, zinc and						
aluminum plating on carbon						
steel, and (6) chemical etching	1					
and milling of aluminum.		1*	4	F007	A	10 (4.54)
007 Spent cyanide plating bath soluti	ions					
from electroplating operations.	•		4	F008	A	10 (4.54)
nna -		1*	. 4	1000	^	10 (47347
Plating bath residues from the bo of plating baths from electrop	ottom Lating			٠.		•
operations where cyanides are	used					
in the process.		1*	4	F009	A	10 (4.54)
009	<b>h</b>	1	•	1007	••	, , , , , , , , , , , , , , , , , , , ,
Spent stripping and cleaning bath solutions from electroplating	•					
operations where cyanides are						
used in the process.		1*	4	F010	Α	10 (4.54)
010 Quenching bath residues from oil		•				
baths from metal heat treating						
operations where cyanides are						
used in the process.		1*	4	F011	A	10 (4.54)
F011 Spent cyanide solutions from sal	t					
bath pot cleaning from metal h	eat					
treating operations.		1*	4	F012	A	10 (4.54)
F012 Quenching wastewater treatment s	ludges	•				
from metal heat treating opera	stions					
where cyanides are used in the						
process.		1	4	F019	Α	10 (4.54)
F019 Wastewater treatment sludges from	om					
the chemical conversion coating	ng of					
aluminum except from zirconium	M nobina					
phosphating in aluminum can we when such phosphating is an	a31111.A					
exclusive conversion coating	process.		,	F020	x	1 (0.454)
F020		1*	4	FU2U	^	1 (0.454)
Wastes (except wastewater and s carbon from hydrogen chloride	pent					
purification) from the						
production or manufacturing						
use (as a reactant, chemical						
intermediate, or component in	1 8					
formulating process) of tri-o tetracholorphenol, or of inte						
mediates used to produce thei	۱ <b>۲</b>					
nesticide derivatives. (This	3					
listing does not include wast	ces					
from the production of hexachlorophene from highly						
purified 2,4,5-trichloropheno	ol.)	1*	4	F021	x	1 (0.454)
F021		1"	•	, , , , ,		
Wastes (except wastewater and starbon from hydrogen chloride	e					
nurification) from the	-					
production or manufacturing						
use (as a reactant, chemical	n a					
intermediate, or component informulating process) of	II <b>G</b>					
nentachlorophenol, or of int	er-					
mediates used to produce its	•					
derivatives.						

1*	4	F022	X	1 (0.454)
•	₹	1022	^	1 (0.434)
1*	4	F023	X	1 (0.454)
1*	4	E024	v	1 (0.454)
•	•	FU24	^	1 (0.454)
1*	4	F025	X	##1 (0.454)
1*	4	F026	X	1 (0.454)
1*	4	F027	X	1 (0.454)
	1*	1* 4	1* 4 F025  1* 4 F025	1* 4 F025 X  1* 4 F026 X

-028	1*	4	F028	X	1 (0.454)
Residues resulting from the					
incineration or thermal treatment of soil					
contaminated with EPA					
Hazardous Waste Nos. F020,					
F021, F022, F023, F026, and					
F027.	1*	4	F032	X	1 (0.454)
F032 Wastewaters (except those that					
have not come into contact with					
process contaminants), process					
residuals, preservative drippage, and spent					
formulations from wood					
preserving processes generated					
at plants that currently use or					
have previously used chlorophenolic formulations					
(except potentially cross-					
contaminated wastes that have					
had the F032 waste code deleted					
in accordance with ^U 261.35 of this chapter or potentially					
cross-contaminated wastes that					
are otherwise currently					
regulated as hazardous wastes					
(i.e., F034 or F035), and where the generator does not resume					
or initiate use of					
chlorophenolic formulations).					
This listing does not include					
K001 bottom sediment sludge from the treatment of					
wastewater from wood preserving					
processes that use creosote					
and/or pentachlorophenol.	1*	4	F034	x	1 (0.454)
F034 Wastewaters (except those that	•	7	1034	^	1 (0.434)
have not come into contact with					
process contaminants), process					
residuals, preservative drippage, and spent					
formulations from wood					
preserving processes generated					
at plants that use cresote					
formulations. This listing does not include K001 bottom					
sediment sludge from the					
treatment of wastewater from					
wood preserving processes that use creosote and/or					
pentachlorophenol.					
F035	1*	4	F035	X	1 (0.454)
Wastewaters (except those that					
have not come into contact with process contaminants), process					
residuals, preservative					
drippage, and spent					
formulations from wood preserving processes generated					
at plants that use inorganic					
preservatives containing					
arsenic or chromium. This					
listing does not include K001 bottom sediment sludge from the					
treatment of wastewater from					
wood preserving processes that					
use creosote and/or					
pentachlorophenol.					

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F037

F038

F037 Petroluem refinery primary oil/water/ solids separation sludge -- Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in: oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, studges generated in aggressive biological treatment units as defined in ^U 261.31(b)(2) (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and KO51 wastes are not included in this listing. F038

Petroluem refinery secondary (emulsified) oil/water/solids separation sludge -- Any sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all studges and floats generated in: induced air flotation (IAF) units, tanks and impoundments, and all studges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from once-through non-contact cooling waters segregated for treatment from other process or oily cooling wastes, sludges and floats generated in aggressive biological treatment units as defined in ^U 261.31(b)(2) (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and F037, K048, and K051 wastes are not included in this listing.

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	 		- <i>-</i> 	Statutory		•••••	Final RQ
Hazardous Substance	CASRN	Regulatory Synonyms	RQ	Code+	RCRA Waste No.	C A	Pounds (Kg)
K001  Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that			1#	4	K001	X	1 (0.454)
use creosote and/or pentachlorope K002 Wastewater treatment sludge from to production of chrome yellow and	he		1*	4	K002	A	10 (4.54)
pigments. K003 Wastewater treatment sludge from t	he		1*	4	K003	A	10 (4.54)
production of molybdate orange p KOO4 Wastewater treatment sludge from t	igments.		1*	4	K004	A	10 (4.54)
production of zinc yellow pigmen KOOS Wastewater treatment sludge from t	ts.		1*	4	K005	A	10 (4.54)
production of chrome green pigme KOO6 Wastewater treatment sludge from t	he		1*	4	K006	A	10 (4.54)
production of chrome oxide green pigments (anhydrous and hydrated K007 Wastewater treatment sludge from t	).		1*	4	K007	A	10 (4.54)
production of iron blue pigments KOO8 Oven residue from the production o			1*	4	K008	Á	10 (4.54)
oxide green pigments. K009 Distillation bottoms from the prod	luction		1*	4	K009	A	10 (4.54)
of acetaldehyde from ethylene. KO10 Distillation side cuts from the pr	oduction of		1*	4	K010	٨	10 (4.54)
acetaldehyde from ethylene. KO11 Bottom stream from the wastewater	stripper		1*	4	K011	A	10 (4.54)
in the production of acrylonitri K013 Bottom stream from the acetonitril		1	1*	4	K013	A	10 (4.54)
the production of acrylonitrile. K014 Bottoms from the acetonitrile purification column in the prod of acrylonitrile.			1*	4	K014	D	5000 (2270)
K015 Still bottoms from the distillati of benzyl chloride.	on		1*	4	K015	A	10 (4.54)
K016  Heavy ends or distillation residu  the production of carbon tetrac			1*	4	K016	x	1 (0.454)
K017  Heavy ends (still bottoms) from t purification column in the prod of epi-chlorohydrin.	he		1*	4	K017	A	10 (4.54)
K018  Heavy ends from the fractionation in ethyl chloride production.	column		1*	4	K018	X	1 (0.454)
K019  Heavy ends from the distillation dichloride in ethylene dichlori			1*	4	K019	x	1 (0.454)
KO2O  Heavy ends from the distillation of the chloride in vinyl chloride mono	of vinyl		1*	4	K020	X	1 (0.454)
production. K021 Aqueous spent antimony catalyst w fluoromethanes production.	aste from		1*	4	K021	A	10 (4.54)
K02Z Distillation bottom tars from the phenol/acetone from cumene.	production	ı of	1*	4	K022	X	1 (0.454)

			A	ppen	dix 1	- (continued
KO23 Distillation light ends from the production of phthalic anhydride from maphthalene.	1*	4	K023	D	5000	(2270)
K024 Distillation bottoms from the production of phthalic anhydride from naphthalene.	1*	4	K024	D	5000	(2270)
K025 Distillation bottoms from the production of	1*	4	K025	A	10	(4.54)
nitrobenzene by the nitration of benzene. KO26 Stripping still tails from the production of	1*	4	K026	C	1000	(454)
methyl ethyl pyridines. KO27 Centrifuge and distillation residues from	1*	4	K027	A	10	(4.54)
toluene diisocyanate production. KO28 Spent catalyst from the hydrochlorinator	1*	4	к028	x	1	(0.454)
reactor in the production of 1,1,1-trichloroethame. K029	1*	4	K029	x	•	(0.454)
Waste from the product steam stripper in the production of 1,1,1-trichloroethane.	,-	•	KU27	^	,	
(030  Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene.	1*	4	K030	X	1	(0.454)
031  By-product salts generated in the production of MSMA and cacodylic acid.	1*	4	K031	x	1	(0.454)
032 Wastewater treatment sludge from the production of chlordane.	1*	4	K032	A	10	(4.54)
033  Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.	1*	4	K033	A	10	(4.54)
034 Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.	1*	4	K034	A	10	(4.54)
035 Wastewater treatment sludges generated in the production of creosote.	1*	4	K035	x	1	(0.454)
036 Still bottoms from toluene reclamation distillation in the production of disulfoton.	1*	4	K036	X	1	(0.454)
037 Wastewater treatment sludges from the production of disulfoton.	1*	4	K037	x	1 (	0.454)
038 Wastewater from the washing and stripping of phorate production.	1*	4	K038	A	10	(4.54)
039  Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.	1*	4	K039	A	10	(4.54)
040 Wastewater treatment sludge from the production of phorate.	1*	4	K040	A	10	(4.54)
041 Wastewater treatment sludge from the production of toxaphene.	1*	4	K041	x	1	(0.454)
042 Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.	1*	4	K042	A	10	(4.54)
2,6-Dichlorophenol waste from the production of 2,4-D.	1*	4	K043	A	10	(4.54)
044 Wastewater treatment sludges from the manufacturing and processing of explosives.	1*	4	K044	A	10	(4.54)
045 Spent carbon from the treatment of wastewater	1*	4	K045	A	10	(4.54)
containing explosives. 046 Wastewater treatment sludges from the	1*	4	K046	A	10	(4.54)

manufacturing, formulation and loading of manufacturing, formulation and loading of based initiating compounds.  MAY Plank/red water from INT operations.  MOSE Plank/red water from INT operations.  MOSE Dissolved air flotation (DAF) float from Dissolved air flotation (DAF) float from Strong Compounds and Stop oil manufactory.  MOSE patroleum refining industry.  MOSE Stop oil manufact cleaning sludge from refining industry.  MOSE Rest exchanger bundle cleaning sludge from the petroleum refining industry.  MOSE Plank paragraph sludge from the petroleum refining industry.  MOSE Plank paragraph sludge from the petroleum refining industry.  MOSE Plank paragraph sludge from the petroleum refining industry.  MOSE Plank paragraph sludge from caking operations.  MOSE Plank paragraph sludge from caking operation.  MOSE Plank paragraph sludge from caking operation.  MOSE Plank paragraph sludge from caking operation.  MOSE Plank paragraph sludge from secondary sludge from sludge from sludge from sludge from sludge from					FF	- (
Pinitrial water from INT operations.   1° 4   K048   A   10 (4.54)	lead-based initiating compounds.					
1		1*	4	K047	A	10 (4.54)
1	048 Dissolved air flotation (DAF) float from	1*	4	K04 <b>8</b>	A	10 (4.54)
10   10   10   10   10   10   10   10	049	1*	4	K049	A	10 (4.54)
### Descriptions inclusion of the petroleum refining inclusion   1° 4 K051 A 10 (4.54) ### API separator studge from the petroleum refining inclustry. ### API separator studge from the petroleum	refining industry. 050	1*	4	K050	A	10 (4.54)
API separator sludge from the petroleum refining inclustry.  032  1	the petroleum refining industry.	1+	4	r051		10 (4.54)
Tank bottoms (leaded) from the petroleum refining industry.    100	API separator sludge from the petroleum refining industry.	·	·		<b>"</b>	
1°   4   K060   X   1 (0.454)	Tank bottoms (leaded) from the petroleum	1*	4	K052	A	10 (4.54)
1°   4   K061   A   10 (4.54)	060 Ammonia still lime sludge from coking	1*	4	K060	×	1 (0.454)
Spent pickle liquor generated by steel   1	061 Emission control dust/sludge from the	1*	4	K061	A	10 (4.54)
finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332).  04  Acid plant blowdown surry/sludge resulting from thickening of blowdown surry/srom primary copper production.  05  Surface impoundment solids contained in and dredged from surface impoundments at primary lead smelting facilities.  05  Sludge from treatment of process wastewater and/or acid plant blowdown from primary zinc production.  069  Sludge from treatment of process wastewater and/or acid plant blowdown from primary zinc production.  069  Sludge from treatment of process wastewater and/or acid plant blowdown from primary zinc production.  069  I* 4 K069 A 10 (4.54)  Emission control dust/sludge from secondary lead smelting.  071  Srine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.  073  Chlorinated hydrocarbon waste from the purification step of the disphragm cell process using graphite enodes in chlorine production.  083  Objectilation bottoms from aniline extraction.  084  Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from assenic or organo-arsenic compounds.  085  Distillation or fractionation column bottoms from the production of veterinary pharmaceuticals from assenic or organo-arsenic compounds.  086  Distillation or fractionation column bottoms from the production of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.  087  Decanter tank ter sludge from coking operations.  088  Spent putiliners from primary aluminum reduction.	furnaces. 062	1*	4	K062	A	10 (4.54)
Acid plant blowdown sturry/studge resulting from thickening of blowdown sturry from primary copper production.  Acid plant blowdown sturry from primary copper production.  BY 4 K065 A 10 (4.54)  Surface impoundment solids contained in and dredged from surface impoundments at primary lead smelting facilities.  BY 4 K066 A 10 (4.54)  Studge from treatment of process wastewater and/or acid plant blowdown from primary zinc production.  BY 4 K069 A 10 (4.54)  Emission control dust/sludge from secondary lead smelting.  BY 4 K071 X 1 (0.454)  Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.  BY 4 K073 A 10 (4.54)  Brine purification stage of the diaphragm cell process using graphite anodes in chlorine production.  BY 4 K083 B 100 (4.54)  Bistillation bottoms from aniline extraction.  BY 4 K083 B 100 (4.54)  Bastewater treatment studges generated during the production of veterinary pharmacauticals from arsenic or organo-arsenic compounds.  BY 4 K085 A 10 (4.54)  Bistillation of fractionation column bottoms from the production of chlorobenzenes.  BY 6 K085 A 10 (4.54)  Bistillation of practionation column bottoms from the production of chlorobenzenes.  BY 6 K086 A 10 (4.54)  BY 7 K086 A 10 (4.54)  BY 8 K087 B 100 (4.54)  BY 8 K087 B 100 (4.54)  BY 9 K088 From unique and studges from cleaning tubes and studges from cleaning tubes and studges from cleaning tubes and studges from primary aluminum reduction.  BY 6 K088 From unique and lead.  BY 7 K087 B 100 (4.54)  BY 8 K088 From unique and lead.  BY 8 K088 From primary aluminum reduction.	finishing operations of facilities within the iron and steel industry (SIC Codes					
Surface impoundment solids contained in and dradged from surface impoundments at primary leads melting facilities.  866 1° 4 K066 A 10 (4.54)  Sludge from treatment of process westewater and/or acid plant blowdown from primary zinc production.  879 1° 4 K069 A 10 (4.54)  Emission control dust/sludge from secondary lead smelting.  871 1° 4 K071 X 1 (0.454)  Emission control dust/sludge from secondary lead smelting.  871 1° 4 K071 X 1 (0.454)  Emission control dust/sludge from secondary lead smelting.  872 1° 4 K071 X 1 (0.454)  Emission control dust/sludge from secondary lead smelting.  873 1° 4 K073 A 10 (4.54)  874 1° 4 K073 A 10 (4.54)  875 1° 4 K073 A 10 (4.54)  875 1° 4 K083 B 100 (4.54)  876 1° 4 K083 B 100 (4.54)  877 1° 4 K084 X 1 (0.454)  878 1° 4 K084 X 1 (0.454)  878 1° 4 K085 A 10 (4.54)  878 1° 4 K085 A 10 (4.54)  879 1° 4 K086 A 10 (4.54)  879 1° 4 K086 A 10 (4.54)  879 1° 4 K087 B 100 (4.54)  879 1° 4 K088	064 Acid plant blowdown slurry/sludge resulting from thickening of blowdown slurry from	1*	4	K064	A	10 (4.54)
Lead smelting facilities.  066  1* 4 K066 A 10 (4.54)  Sludge from treatment of process wastewater and/or acid plant blowdown from primary zinc production.  059  Emission control dust/sludge from secondary lead smelting.  071  1* 4 K071 X 1 (0.454)  Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.  073  Chlorinated hydrocarbon waste from the purification step of the disphragm cell process using graphite anodes in chlorine production.  083  Distillation bottoms from aniline extraction.  1* 4 K083 8 100 (45.4)  Mastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.  085  Distillation or fractionation column bottoms from the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.  086  1* 4 K085 A 10 (4.54)  Distillation or fractionation column bottoms from the production of chlorobenzenes.  086  1* 4 K086 A 10 (4.54)  1* 4 K086 A 10 (4.54)  1* 4 K086 B 100 (45.4)  1* 4 K087 B 100 (45.4)  1* 4 K088  1* 4 K087 B 100 (45.4)  1* 4 K088  1* 4 K088  1* 4 K088  1* 4 K088  1* 4 K087 B 100 (45.4)	065 Surface impoundment solids contained in and	1*	4	K065	A	10 (4.54)
zinc production.  25	lead smelting facilities. 066 Sludge from treatment of process wastewater	1*	4	K066	A	10 (4.54)
lead smelting.  Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.  14	zinc production. 069	1*	4	K069	A	10 (4.54)
Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.  073 1* 4 K073 A 10 (4.54)  Chiorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.  083 1* 4 K083 B 100 (45.4)  Distillation bottoms from aniline extraction.  084 1* 4 K084 X 1 (0.454)  Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.  085 1* 4 K085 A 10 (4.54)  Distillation or fractionation column bottoms from the production of chlorobenzenes.  086 1* 4 K086 A 10 (4.54)  Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.  087 1* 4 K087 B 100 (45.4)  Decanter tank tar sludge from coking operations.  088 1* 4 K088  Spent potliners from primary aluminum reduction.	lead smelting.	1*	4	K071	¥	1 (0.454)
Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.  083	Brine purification muds from the mercury cell process in chlorine production, where	·	•		•	( (0.434)
Distillation bottoms from aniline extraction.  1 4 K083 8 100 (45.4)  Distillation bottoms from aniline extraction.  1 4 K084 X 1 (0.454)  Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.  1 4 K085 A 10 (4.54)  Distillation or fractionation column bottoms from the production of chlorobenzenes.  1 4 K086 A 10 (4.54)  Solvent washes and sludges, caustic washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.  1 4 K087 B 100 (45.4)  Decanter tank tar sludge from coking operations.  1 4 K088  Spent potliners from primary aluminum reduction.	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell	1*	4	K073	A	10 (4.54)
Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.  1* 4 K085 A 10 (4.54)  Distillation or fractionation column bottoms from the production of chlorobenzenes.  086 1* 4 K086 A 10 (4.54)  Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.  087 1* 4 K087 B 100 (45.4)  Decanter tank tar sludge from coking operations.  088 5pent potliners from primary aluminum reduction.	083	1*	4	K083	8	100 (45.4)
085 1* 4 K085 A 10 (4.54) Distillation or fractionation column bottoms from the production of chlorobenzenes. 086 1* 4 K086 A 10 (4.54) Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead. 087 1* 4 K087 8 100 (45.4) Decanter tank tar sludge from coking operations. 088 5pent potliners from primary aluminum reduction. 090 1* 4 K088	084 Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from	1*	4	K084	X	1 (0.454)
086 Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.  087  Decanter tank tar sludge from coking operations.  088  Spent potliners from primary aluminum reduction.  090  1*  4 K086  A 10 (4.54)  4 K087  8 100 (45.4)	085 Distillation or fractionation column bottoms	1*	4	K085	A	10 (4.54)
087 1* 4 K087 B 100 (45.4) Decanter tank tar sludge from coking operations. 088 1* 4 K088 Spent potliners from primary aluminum reduction. 090 1* 4 K090	086 Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing	1*	4	K086	<b>A</b>	10 (4.54)
1088 1 4 K088  Spent potliners from primary aluminum reduction.  1090 1 4 K090	- <del></del> :	1*	4	K087	8	100 (45.4)
090 1* 4 κ090	088	1*	4	K088		
ferrochromiumsilicon production.	090 Emission control dust or sludge from	1*	4	K090		

				PP		(
KUY1	1	4	K091			
Emission control dust or sludge from ferrochromium production. K093	1*	4	K093	D	5000	(2270)
Distillation light ends from the production of phthalic anhydride from ortho-xylene.						
K094 Distillation bottoms from the production of phthalic anhydride from ortho-xylene.	1*	4	K094	D	5000	(2270)
K095 Distillation bottoms from the production of 1,1,1-trichloroethame.	1*	4	K095	8	100	(45.4)
K096 Theavy ends from the heavy ends column from the	1*	4	K096	8	100	(45.4)
production of 1,1,1-trichloroethane. KO97 Vacuum stripper discharge from the chlordane	1*	4	K097	x	1	(0.454)
chlorinator in the production of chlordane. KO98 Untreated process wastewater from the	1*	4	K098	×	1	(0.454)
production of toxaphene. KO99	1*	4	K099	A	10	(4.54)
Untreated wastewater from the production of 2,4-D. (100	1*	4	K100	A	10	(4.54)
Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.						
(101 Distillation tar residues from the distillation	1*	4	K101	x	1	(0.454)
of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.						
(102 Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-	1*	4	K102	X	1	(0.454)
arsenic compounds.	1*	4	K103	В	100	(45.4)
Process residues from aniline extraction from the production of aniline.	1*	4	K104			
Combined wastewater streams generated from nitrobenzene/aniline production.		•		A	10	(4.54)
105 Separated aqueous stream from the reactor product Washing step in the production of chlorobenzenes.	1*	4	K105	A	10	(4.54)
106 Wastewater treatment sludge from the mercury cell process in chlorine production.	1*	4	K106	X	1	(0.454)
107  Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazines.	10	4	K107	X	10	(4.54)
108 Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	10	4	K108	X	10	(4.54)
109 Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	10	4	K109	x	10	(4.54)
110 Condensed column overheads from intermediate separation from the production of 1,1-dimethyl- hydrazine (UDMH) from carboxylic acid hydrazides,	10	4	K110	×	10	(4.54)
111 Product washwaters from the production of dinitrotoluene via nitration of toluene.	1*	4	K111	A	10	(4.54)
(112) Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.	1*	4	K112	A	10	(4.54)

K113 Condensed liquid light ends from the purification of toluenedjamine in the production of	1*	4	к113	٨	10 (4.54)
toluenediamine via hydrogenation of dinitrotoluene.					
K114	1*	4	K114	A	10 (4.54)
Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.					,,
K115	1*	4	K115	A	10 (4.54)
Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.					
K116	1*	4	K116	A	10 (4.54)
Organic condensate from the solvent recovery column in the production of toluene dissocyanate via phospenation of toluenediamine.  K117	4.5				
Wastewater from the reaction vent gas scrubber in the production of ethere.	1*	4	K117	X	1 (0.454)
K118	1*	4	K118	x	4 40 4545
Spent absorbent solids from purification of ethylene dibromide in the production of ethylene dibromide. K123	1*	·		• • •	1 (0.454)
Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebis-dithiocarbamic acid and its salts.	1*	4	K123	٨	10 (4.54)
K124	1*	4	K124	A	10 (4.54)
Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts. K125	_				
Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts.	1*	4	K125	A	10 (4.54)
K126 Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts.	1*	4	K126	٨	10 (4.54)
K131 Wastewater from the reactor and spent sulfuric acid from the acid dryer in the production of methyl	100	4	K131	x	100 (45.4)
bromide.					
K132 Spent absorbent and wastewater solids from the	1000	4	K132	X	1000 (454)
production of methyl bromide.					
K136 Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	1*	4	K136	X	1 (0.454)
K141	1*	4	K141	X	1 (0.454)
Process related from the recovery of coal tar, including, but not limited to, tar collecting sump residues from the production of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludge from coking operations.)					
K142	1*	4	K142	x	1 (0.454)
Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal.		·		•	1 (0.434)
K143	1*	4	K143	X	1 (0.454)
Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from					
the recovery of coke by-products produced from coal.	44				
Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contemination sump sludges from the recovery of coke by-products produced from coal.	1*	4	K144	X	1 (0.454)
K145 Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.	1*	4	K145	X	1 (0.454)

			A	ppend	ix I - (continued)
K147	1*	4	K147	X	1 (0.454)
Tar storage tank residues from coal tar refining. K148 Residues from coal tar distillation, including, but	1*	4	K148	x	1 (0.454)
not limited to, still bottoms.  K149  Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring- chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups. (This waste	1*	4	K149	A	10 (4.54)
does not include still bottoms from the distillation of benzyl chloride.] K150 Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production	1*	4	K150	A	10 (4.54)
of alpha- (or methyl-) chlorinated toluenes, ring- chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups. K151 Wastewater treatment sludges, excluding neutralization	1*	4	K151	A	10 (4.54)
and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.					

 $<sup>\</sup>dotplus$  -- Indicates the statutory source as defined by 1, 2, 3, and 4 below.

Date :06/30/1993

<sup>+ --</sup> No reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 100 micrometers (0.004 inches).

<sup>111 --</sup> The RQ for asbestos is limited to friable forms only.

-- Indicates the statutory source as defined by 4 below.

1 -- Indicates that the statutory source for designation of this hazardous substance under CERCLA is CWA Section 311(b)(4).

<sup>311(</sup>b)(4).
2 -- Indicates that the statutory source for designation of this hazardous substance under CERCLA is CMA Section 307(a).
3 -- Indicates that the statutory source for designation of this hazardous substance under CERCLA is CAA Section 112.
4 -- Indicates that the statutory source for designation :- this hazardous substance under CERCLA is RCRA Section 3001.
1\* -- Indicates that the 1-pound RQ is a CERCLA statutory RQ.
# -- Indicates that the RQ is subject to change when the assessment of potential carcinogenicity is completed.
## -- The Agency may adjust the statutory RQ for this hazardous substance in a future rulemaking; until then the statutory RQ applies.
- Ou -- The adjusted RQs for radionuclides may be found in

Appendix B to this table.

\*\* -- Indicates that no RQ is being assigned to the generic or broad class.

<sup>[</sup>As amended at 57 FR 61492, Dec. 24, 1992; 58 FR 35314, June 30, 1993]

### APPENDIX II

List of CERCLA Radionuclides and Reportable Quantities

40 CFR 302.4 Appendix B (as of November, 1993)

## APPENDIX II - List of CERCLA Radionuclides and Reportable Quantities (40 CFR 302.4 Appendix B)

Radionuclide	Atomic Number	Final RQ Ci (Bq)
Radionuclides*		1& (3.7E 10)
Actinium-224	89	100 (3.7E 12)
Actinium-225	89	1 (3.7E 10)
Actinium-226	89 89 89 89	10 (3.7E 11)
Actinium-227	89	0.001 (3.7E 7)
Actinium-228	89	10 (3.7E 11)
Aluminum-26	13	10 (3.7E 11)
Americium-237	95 25	1000 (3.7E 13)
Americium-238	95	100 (3.7E 12)
Radionuclides* Actinium-225 Actinium-226 Actinium-227 Actinium-227 Actinium-228 Aluminum-26 Americium-237 Americium-238 Americium-239 Americium-240 Americium-241 Americium-242m	95 05	100 (3.7E 12)
Americium-240	95	10 (3.7E 11)
Americium-241	93 05	0.01 (3.7E 8)
Americium-242m	93 05	0.01 (3.7E 8)
Americium-242	73 05	100 (3.7E 12) 0.01 (3.7E 8)
Americium-244m	73 05	1000 (3.7E 13)
Actinium-225 Actinium-226 Actinium-227 Actinium-228 Aluminum-26 Americium-238 Americium-239 Americium-240 Americium-241 Americium-242 Americium-242 Americium-243 Americium-243 Americium-244 Americium-244 Americium-245 Americium-246 Antimony-115 Antimony-116 Antimony-116 Antimony-117 Antimony-119 Antimony-119 Antimony-119 Antimony-120 (16 min) Antimony-120 (5.76 dey) Antimony-124 Antimony-124 Antimony-124 Antimony-124 Antimony-124 Antimony-124	95 95	10 (3.7E 11)
Americium-245	95 95	1000 (3.7E 13)
Americium-246m	95	1000 (3.7E 13)
Americium-246	95	1000 (3.7E 13)
Antimony-115	51	1000 (3.7E 13)
Antimony-116m	51	1000 (3.7E 13) 100 (3.7E 12)
Antimony-116	51	1000 (3.7E 13)
Antimony-117	51	1000 (3.7E 13)
Antimony-118m	51	10 (3.7E 11)
Antimony-119	51	1000 (3.7E 13)
Antimony-120		
(16 min)	וכ	1000 (3.7E 13)
45 74 days	E4	10 /7 75 11)
Antimony 122	51 51 51	10 (3.7E 11) 10 (3.7E 11)
Antimony-124m	51	1000 (3.7E 13)
Antimony-124	51	10 (3.7E 11)
Antimony-125	51	10 (3.7E 11)
Antimony-126m	51	1000 (3.7E 13)
Antimony-126	51	10 (3.7E 11)
Antimony-127	51	10 (3.7E 11)
(16 min) Antimony-120 (5.76 day) Antimony-122 Antimony-124m Antimony-125 Antimony-126m Antimony-126 Antimony-127 Antimony-128 (10.4 min)		
	51	1000 (3.7E 13)
Antimony-128		
(9.01 hr)	51 51 51 51	10 (3.7E 11)
Antimony-129 Antimony-130 Antimony-131	21 E4	100 (3.7E 12)
Antimony 130	51 51	100 (3.7E 12) 1000 (3.7E 13)
Argon-39	18	1000 (3.7E 13)
Argon-41	18	10 (3.7E 11)
Arsenic-69	33	1000 (3.7E 13)
Arsenic-70	33	100 (3.7E 12)
Arsenic-71	33 33	100 (3.7E 12)
Arsenic-72		10 (3.7E 11)
Arsenic-73	33	100 (3.7E 12)
Arsenic-74	33	10 (3.7E 11) 100 (3.7E 12)
Arsenic-76	33	100 (3.7E 12)
Arsenic-77	33	1000 (3.7E 13)
Arsenic-78	33	100 (3.7E 12)
Astatine-207	85	100 (3.7E 12)

Astatine-211	85	100 (3.7E 12)
Barium-126	56	1000 (3.7E 13)
Barium-128	56	10 (3.7E 11)
Barium-131m	56	1000 (3.7E 13)
Barium-131	56	10 (3.7E 11)
Barium-133m	56	100 (3.7E 12)
Barium-133	56	10 (3.7E 11)
Barium-135m	56	1000 (3.7E 13)
Barium-139	56	1000 (3.7E 13)
Barium-140	56	10 (3.7E 11)
Barium-141	56 54	1000 (3.7E 13)
Barium-142 Berkelium-245	56 97	1000 (3.7E 13) 100 (3.7E 12)
Berkelium-246	97	10 (3.7E 12)
Berkelium-247	97	0.01 (3.7E 8)
Berkelium-249	97	1 (3.7E 10)
Berkelium-250	97	100 (3.7E 12)
Beryllium-7	4	100 (3.7E 12)
Beryllium-10	4	1 (3.7E 10)
Bismuth-200	83	100 (3.7E 12)
Bismuth-201	83	100 (3.7E 12)
Bismuth-202	83	1000 (3.7E 13)
Bismuth-203 Bismuth-205	83 83	10 (3.7E 11) 10 (3.7E 11)
Bismuth-206	83	10 (3.7E 11)
Bismuth-207	83	10 (3.7E 11)
Bismuth-210m	83	0.1 (3.7E 9)
Bismuth-210	83	10 (3.7E 11)
Bismuth-212	83	100 (3.7E 12)
Bismuth-213	83	100 (3.7E 12)
Bismuth-214	83	100 (3.7E 12)
Bromine-74m	35	100 (3.7E 12)
Bromine-74	35	100 (3.7E 12)
Bromine-75	35	100 (3.7E 12)
Bromine-76	<b>3</b> 5	10 (3.7E 11)
Bromine-77 Bromine-80m	35 35	100 (3.7E 12) 1000 (3.7E 13)
Bromine-80	35 35	1000 (3.7E 13)
Bromine-82	35	10 (3.7E 11)
Bromine-83	35	1000 (3.7E 13)
Bromine-84	35	100 (3.7E 12)
Cadmium-104	48	1000 (3.7E 13)
Cadmium-107	48	1000 (3.7E 13)
Cadmium-109	48	1 (3.7E 10)
Cadmium-113m	48	0.1 (3.7E 9)
Cadmium-113 Cadmium-115m	48 48	0.1 (3.7E 9) 10 (3.7E 11)
Cadmium-115	48	100 (3.7E 12)
Cadmium-117m	48	10 (3.7E 11)
Cadmium-117	48	100 (3.7E 12)
Calcium-41	20	10 (3.7E 11)
Calcium-45	20	10 (3.7E 11)
Calcium-47	20	10 (3.7E 11)
Californium-244	98	1000 (3.7E 13)
Californium-246	98	10 (3.7E 11)
Californium-248	98	0.1 (3.7E 9)
Californium-249	98	0.01 (3.7E 8)
Californium-250	98	0.01 (3.7E 8)
Californium-251	98	0.01 (3.7E 8)
Californium-252	98	0.1 (3.7E 9)
Californium-253 Californium-254	98 98	10 (3.7E 11) 0.1 (3.7E 9)
Carbon-11	6	1000 (3.7E 13)
Carbon-14	6	10 (3.7E 11)
Cerium-134	58	10 (3.7E 11)
Cerium-135	58	10 (3.7E 11)
Cerium-137m	58	100 (3.7E 12)
Cerium-137	58	1000 (3.7E 13)
Cerium-139	58	100 (3.7E 12)
Cerium-141	58	10 (3.7E 11)
Cerium-143	58	100 (3.7E 12)
Cerium-144	58	1 (3.7E 10)
Cesium-125	55	1000 (3.7E 13)

		400 47 77 401
Cesium-127	55	100 (3.7E 12)
Cesium-129	55	100 (3.7E 12) 1000 (3.7E 13)
Cesium-130	55 55	1000 (3.7E 13) 1000 (3.7E 13)
Cesium-131	55 55	10 (3.7E 11)
Cesium-132	55	1000 (3.7E 13)
Cesium-134m Cesium-134	55 55	1 (3.7E 10)
Cesium-135m	55	100 (3.7E 12)
Cesium-135	ŚŚ	10 (3.7E 11)
Cesium-136	55	10 (3.7E 11)
Cesium-137	55	1 (3.7E 10)
Cesium-138	55	100 (3.7E 12)
Chlorine-36	17	10 (3.7E 11)
Chlorine-38	17	100 (3.7E 12)
Chlorine-39	17	100 (3.7E 12)
Chromium-48	24	100 (3.7E 12)
Chromium-49	24	1000 (3.7E 13)
Chromium-51	24	1000 (3.7E 13) 10 (3.7E 11)
Cobalt-55	27	
Cobalt-56	27	10 (3.7E 11) 100 (3.7E 12)
Cobalt-57	27	1000 (3.7E 12)
Cobalt-58m	27 27	10 (3.7E 11)
Cobalt-58	27	1000 (3.7E 13)
Cobalt-60m	27	10 (3.7E 11)
Cobalt-60	27	1000 (3.7E 13)
Cobalt-61 Cobalt-62m	27	1000 (3.7E 13)
Copper-60	29	100 (3.7E 12)
Copper-61	29	100 (3.7E 12)
Copper-64	29	1000 (3.7E 13)
Copper-67	29	100 (3.7E 12)
Curium-238	96	1000 (3.7E 13)
Curium-240	96	1 (3.7E 10)
Curium-241	96	10 (3.7E 11)
Curium-242	96	1 (3.7E 10)
Curium-243	96	0.01 (3.7E 8)
Curium-244	96	0.01 (3.7E 8)
Curium-245	96	0.01 (3.7E 8)
Curium-246	96	0.01 (3. <u>7</u> E 8)
Curium-247	96	0.01 (3.7E 8)
Curium-248	96	0.001 (3.7E 7)
Curium-249	96	1000 (3.7E 13)
Dysprosium-155	66	100 (3.7E 12)
Dysprosium-157	66	100 (3.7E 12)
Dysprosium-159	66	100 (3.7E 12)
Dysprosium-165	66	1000 (3.7E 13) 10 (3.7E 11)
Dysprosium-166	66	
Einsteinium-250	99	10 (3.7E 11) 1000 (3.7E 13)
Einsteinium-251	99	10 (3.7E 11)
Einsteinium-253	99 99	1 (3.7E 10)
Einsteinium-254m	99	0.1 (3.7E 9)
Einsteinium-254	68	100 (3.7E 12)
Erbium-161	40	1000 (3.7E 13)
Erbium-165	68 68	100 (3.7E 12)
Erbium-169 Erbium-171	68	100 (3.7E 12)
Erbium-172	68	10 (3.7E 11)
Europium-145	63	10 (3.7E 11)
Europium-146	63	10 (3.7E 11)
Europium-147	63	10 (3.7E 11)
Europium-148	63	10 (3.7E 11)
Europium-149	63	100 (3.7E 12)
Europium-150		
(12.6 hr)	63	1000 (3.7E 13)
Europium-150		44
(34.2 yr)	63	10 (3.7E 11)
Europium-152m	63	100 (3.7E 12)
Europium-152	63	10 (3.7E 11)
Europium-154	63	10 (3.7E 11)
Europium-155	63	10 (3.7E 11)
Europium-156	63	10 (3.7E 11) 10 (3.7E 11)
Europium-157	63 47	10 (3.7E 11)
Europium-158	63	10 (3.7E 11)
Fermium-252	100	10 (3.75 11)

Fermium-253	100	10 (3.7E 11)
Fermium-254	100	100 (3.7E 12)
Fermium-255	100 100	100 (3.7E 12) 1 (3.7E 10)
Fermium-257	9	1000 (3.7E 13)
Fluorine-18 Francium-222	87	100 (3.7E 13)
Francium-223	87	100 (3.7E 12)
Gadolinium-145	64	100 (3.7E 17)
Gadolinium-146	64	10 (3.7E 11)
Gadolinium-147	64	10 (3.7E 11)
Gadolinium-148	64	0.001 (3.7E 7)
Gadolinium-149	64	100 (3.7E 12)
Gadolinium-151	64	100 (3.7E 12)
Gadolinium-152	64	0.001 (3.7E 7)
Gadolinium-153	64	10 (3.7E 11)
Gadolinium-159	64	1000 (3.7E 13)
Gallium-65	31	1000 (3.7E 13)
Gallium-66	31	10 (3.7E 11)
Gallium-67	31	100 (3.7E 12)
Gallium-68	31	1000 (3.7E 13)
Gallium-70	31	1000 (3.7E 13)
Gallium-72	31	10 (3.7E 11)
Gallium-73	31	100 (3.7E 12)
Germanium-66	32	100 (3.7E 12)
Germanium-67	32	1000 (3.7E 13)
Germanium-68	32	10 (3.7E 11)
Germanium-69	32	10 (3.7E 11)
Germanium-71	32	1000 (3.7E 13)
Germanium-75	32	1000 (3.7E 13)
Germanium-77	32	10 (3.7E 11)
Germanium-78	32	1000 (3.7E 13)
Gold-193	79	100 (3.7E 12)
Gold-194	79	10 (3.7E 11)
Gold-195	79	100 (3.7E 12)
Gold-198m	79	10 (3.7E 11)
Gold-198	79	100 (3.7E 12)
Gold-199	79	100 (3.7E 12)
Gold-200m	79	10 (3.7E 11)
Gold-200	79	1000 (3.7E 13)
Gold-201	79	1000 (3.7E 13)
Hafnium-170	72	100 (3.7E 12)
Hafnium-172	72	1 (3.7E 10)
Hafnium-173	72	100 (3.7E 12)
Hafnium-175	72	100 (3.7E 12)
Hafnium-177m	72	1000 (3.7E 13)
Hafnium-178m	72 72	0.1 (3.7E 9)
Hafnium-179m	72 72	100 (3.7E 12)
Hafnium-180m Hafnium-181	72 72	100 (3.7E 12)
Hafnium-182m	72	10 (3.7E 11) 100 (3.7E 12)
Hafnium-182	72	0.1 (3.7E 9)
Hafnium-183	72	100 (3.7E 12)
Hafnium-184	72	100 (3.7E 12)
Holmium-155	67	1000 (3.7E 12)
Holmium-157	67	1000 (3.7E 13)
Holmium-159	67	1000 (3.7E 13)
Holmium-161	67	1000 (3.7E 13)
Holmium-162m	67	1000 (3.7E 13)
Holmium-162	67	1000 (3.7E 13)
Holmium-164m	67	1000 (3.7E 13)
Holmium-164	67	1000 (3.7E 13)
Holmium-166m	67	1 (3.7E 10)
Holmium-166	67	100 (3.7E 12)
Holmium-167	67	100 (3.7E 12)
Hydrogen-3	1	100 (3.7E 12)
Indium-109	49	100 (3.7E 12)
Indium-110 (69.1 min)	49	100 (3.7E 12)
Indium-110 (4.9 hr)	49	10 (3.7E 11)
Indium-111	49	100 (3.7E 12)
Indium-112	49	1000 (3.7E 13)
Indium-113m	49	1000 (3.7E 13)
Indium-114m	49	10 (3.7E 11)
Indium-115m	49	100 (3.7E 12)

Indium-115		
	49	0.1 (3.78 9)
Indium-116m	49	100 (3.7E 12)
Indium-117m	49	100 (3.7E 12)
Indium-117	49	
Indium-119m	49	1000 (3.7E 13)
		1000 (3.7E 13)
lodine-120m	53	100 (3.7E 12)
Iodine-120	53	10 (3.7E 11)
Iodine-121	53	100 (3.7E 12)
Iodine-123	53	
		10 (3.7E 11)
Iodine-124	53	0.1 (3.7E 9)
iodine-125	53	0.01 (3.7E 8)
Iodine-126	53	0.01 (3.7E 8)
Lodine-128	53	
Iodine-129	53	1000 (3.7E 13)
		0.001 (3.7E 7)
lodine-130	53	1 (3.7E 10)
Iodine-131	53	0.01 (3.7E 8)
Iodine-132m	53	10 (3.7E 11)
lodine-132	53	
Iodine-133		10 (3.7E 11)
	53	0.1 (3.7E 9)
Iodine-134	53	100 (3.7E 12)
lodine-135	53	10 (3.7E 11)
Iridium-182	77	1000 (3.7E 13)
Iridium-184	77	
		100 (3.7E 12)
Iridium-185	<u>77</u>	100 (3.7E 12)
iridium-186	77	10 (3.7E 11)
Iridium-187	77	100 (3.7E 12)
Iridium-188	77	10 (3.7E 11)
Iridium-189	77	
		100 (3.7E 12)
Iridium-190m	<u>77</u>	1000 (3.7E 13)
Iridium-190	<b>7</b> 7	10 (3.7E 11)
Iridium-192m	77	100 (3.7E 12)
iridium-192	77	10 (3.7E 11)
iridium-194m	77	
		10 (3.7E 11)
Iridium-194	77	100 (3.7E 12)
Iridium-195m	77	100 (3.7E 12)
Iridium-195	77	1000 (3.7E 13)
Iron-52	26	100 (3.7E 12)
1ron-55	26	100 (3.76 12)
		100 (3.7E 12)
1 ron-59	26	10 (3.7E 11)
Iron-60	26	0.1 (3.7E 9)
Krypton-74	36	10 (3.7E 11)
Krypton-76	36	10 (3.7E 11)
		10 (3.7E 11)
Krypton-77	36	
	36 36	100 (3.7E 12)
Krypton-77	36	100 (3.7E 12) 1000 (3.7E 13)
Krypton-77 Krypton-79 Krypton-81	36 36 36	1000 (3.7E 13)
Krypton-77 Krypton-79 Krypton-81 Krypton-83m	36 36 36 36	1000 (3.7E 13) 1000 (3.7E 13)
Krypton-77 Krypton-79 Krypton-81 Krypton-83m Krypton-85m	36 36 36 36 36	1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 12)
Krypton-77 Krypton-79 Krypton-81 Krypton-85m Krypton-85 Krypton-85	36 36 36 36 36 36	1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 12) 1000 (3.7E 13)
Krypton-77 Krypton-79 Krypton-81 Krypton-83m Krypton-85m	36 36 36 36 36	1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 12)
Krypton-77 Krypton-79 Krypton-81 Krypton-85m Krypton-85 Krypton-85	36 36 36 36 36 36	1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 12) 1000 (3.7E 13) 10 (3.7E 11)
Krypton-77 Krypton-79 Krypton-81 Krypton-85m Krypton-85 Krypton-85 Krypton-87 Krypton-88	36 36 36 36 36 36 36 36	1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 12) 1000 (3.7E 13) 10 (3.7E 11) 10 (3.7E 11)
Krypton-77 Krypton-79 Krypton-81 Krypton-85m Krypton-85 Krypton-85 Krypton-87 Krypton-88 Lanthanum-131	36 36 36 36 36 36 36 36 36	1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 12) 1000 (3.7E 13) 10 (3.7E 11) 10 (3.7E 11) 10 (3.7E 11)
Krypton-77 Krypton-81 Krypton-83m Krypton-85 Krypton-85 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-132	36 36 36 36 36 36 36 36 57	1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 12) 1000 (3.7E 13) 10 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 12)
Krypton-77 Krypton-79 Krypton-81 Krypton-85m Krypton-85 Krypton-85 Krypton-87 Krypton-88 Lanthanum-131	36 36 36 36 36 36 36 36 57 57	1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 12) 1000 (3.7E 13) 10 (3.7E 11) 10 (3.7E 11) 10 (3.7E 11)
Krypton-77 Krypton-81 Krypton-83m Krypton-85 Krypton-85 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-132	36 36 36 36 36 36 36 36 57	1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 12) 1000 (3.7E 13) 10 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 12)
Krypton-77 Krypton-89 Krypton-83m Krypton-85m Krypton-85 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-132 Lanthanum-135 Lanthanum-135	36 36 36 36 36 36 36 57 57 57	1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 12) 1000 (3.7E 13) 10 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 12) 1000 (3.7E 13) 10 (3.7E 13)
Krypton-77 Krypton-79 Krypton-83m Krypton-85m Krypton-85 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-132 Lanthanum-135 Lanthanum-137	36 36 36 36 36 36 36 57 57 57 57	1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 12) 1000 (3.7E 11) 10 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 13) 1000 (3.7E 12) 1000 (3.7E 13) 10 (3.7E 11) 1 (3.7E 10)
Krypton-77 Krypton-89 Krypton-83m Krypton-85m Krypton-85 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-132 Lanthanum-135 Lanthanum-137 Lanthanum-138	36 36 36 36 36 36 36 57 57 57 57	1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 12) 1000 (3.7E 11) 10 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 13) 1000 (3.7E 12) 1000 (3.7E 13) 10 (3.7E 11) 1 (3.7E 10) 10 (3.7E 11)
Krypton-77 Krypton-89 Krypton-83m Krypton-85m Krypton-85 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-132 Lanthanum-135 Lanthanum-137 Lanthanum-138 Lanthanum-140 Lanthanum-140	36 36 36 36 36 36 36 57 57 57 57 57	1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 12) 1000 (3.7E 13) 10 (3.7E 11) 10 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 13) 100 (3.7E 13) 10 (3.7E 11) 1 (3.7E 11) 1 (3.7E 11) 10 (3.7E 11)
Krypton-77 Krypton-79 Krypton-83m Krypton-85m Krypton-85 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-132 Lanthanum-135 Lanthanum-137 Lanthanum-140 Lanthanum-140 Lanthanum-142	36 36 36 36 36 36 36 57 57 57 57 57	1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 12) 1000 (3.7E 13) 10 (3.7E 11) 10 (3.7E 11) 100 (3.7E 13) 100 (3.7E 13) 100 (3.7E 13) 10 (3.7E 11) 1 (3.7E 11) 1 (3.7E 11) 1 (3.7E 11) 100 (3.7E 11) 100 (3.7E 13)
Krypton-77 Krypton-89 Krypton-83m Krypton-85m Krypton-85 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-132 Lanthanum-135 Lanthanum-137 Lanthanum-138 Lanthanum-140 Lanthanum-140	36 36 36 36 36 36 36 57 57 57 57 57	1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 12) 1000 (3.7E 13) 10 (3.7E 11) 10 (3.7E 11) 100 (3.7E 13) 100 (3.7E 13) 100 (3.7E 13) 10 (3.7E 11) 1 (3.7E 11) 1 (3.7E 11) 1 (3.7E 11) 100 (3.7E 11) 100 (3.7E 13)
Krypton-77 Krypton-79 Krypton-83 Krypton-85 Krypton-85 Krypton-87 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-135 Lanthanum-135 Lanthanum-140 Lanthanum-140 Lanthanum-142 Lanthanum-142	36 36 36 36 36 36 36 57 57 57 57 57 57	1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 12) 1000 (3.7E 13) 10 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 13) 100 (3.7E 13) 10 (3.7E 11) 1 (3.7E 11) 1 (3.7E 10) 10 (3.7E 13) 100 (3.7E 13) 100 (3.7E 13) 1000 (3.7E 13)
Krypton-77 Krypton-79 Krypton-83 Krypton-85 Krypton-85 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-132 Lanthanum-135 Lanthanum-137 Lanthanum-140 Lanthanum-141 Lanthanum-141 Lanthanum-142 Lanthanum-143 Lead-195m	36 36 36 36 36 36 36 57 57 57 57 57 57 57	1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 11) 10 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 12) 1000 (3.7E 11) 1 (3.7E 11) 1 (3.7E 10) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 13) 100 (3.7E 13)
Krypton-77 Krypton-79 Krypton-83 Krypton-85 Krypton-85 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-132 Lanthanum-137 Lanthanum-137 Lanthanum-140 Lanthanum-140 Lanthanum-142 Lanthanum-142 Lanthanum-143 Lead-195m Lead-198	36 36 36 36 36 36 36 57 57 57 57 57 57 57 57	1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 12) 1000 (3.7E 13) 100 (3.7E 11) 1 (3.7E 10) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 13) 100 (3.7E 13) 100 (3.7E 13) 1000 (3.7E 13)
Krypton-77 Krypton-79 Krypton-81 Krypton-83m Krypton-85 Krypton-85 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-132 Lanthanum-135 Lanthanum-137 Lanthanum-140 Lanthanum-141 Lanthanum-142 Lanthanum-142 Lanthanum-143 Lead-195m Lead-198 Lead-199	36 36 36 36 36 36 37 57 57 57 57 57 57 57 57 57	1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 12) 1000 (3.7E 13) 10 (3.7E 11) 10 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 13) 10 (3.7E 11) 1 (3.7E 10) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 13) 100 (3.7E 13) 1000 (3.7E 12)
Krypton-77 Krypton-79 Krypton-83m Krypton-85m Krypton-85 Krypton-87 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-135 Lanthanum-137 Lanthanum-140 Lanthanum-140 Lanthanum-141 Lanthanum-142 Lanthanum-142 Lanthanum-143 Lead-195m Lead-198 Lead-199 Lead-200	36 36 36 36 36 36 36 57 57 57 57 57 57 57 57 82 82 82	1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 12) 1000 (3.7E 13) 10 (3.7E 11) 10 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 13) 10 (3.7E 13) 10 (3.7E 11) 1 (3.7E 10) 10 (3.7E 11) 1000 (3.7E 13) 1000 (3.7E 12) 1000 (3.7E 12)
Krypton-77 Krypton-79 Krypton-81 Krypton-83m Krypton-85 Krypton-85 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-132 Lanthanum-135 Lanthanum-137 Lanthanum-140 Lanthanum-141 Lanthanum-142 Lanthanum-142 Lanthanum-143 Lead-195m Lead-198 Lead-199	36 36 36 36 36 36 37 57 57 57 57 57 57 57 57 57	1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 12) 1000 (3.7E 13) 10 (3.7E 11) 10 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 13) 10 (3.7E 11) 1 (3.7E 10) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 13) 100 (3.7E 13) 1000 (3.7E 12)
Krypton-77 Krypton-79 Krypton-83m Krypton-85m Krypton-85 Krypton-87 Krypton-87 Krypton-87 Lanthanum-131 Lanthanum-135 Lanthanum-135 Lanthanum-140 Lanthanum-140 Lanthanum-142 Lanthanum-142 Lanthanum-143 Lead-195m Lead-198 Lead-199 Lead-200 Lead-201	36 36 36 36 36 36 36 57 57 57 57 57 57 57 57 57 82 82 82 82	1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 12) 1000 (3.7E 13) 10 (3.7E 11) 10 (3.7E 11) 100 (3.7E 13) 100 (3.7E 13) 100 (3.7E 13) 10 (3.7E 13) 10 (3.7E 11) 1 (3.7E 11) 1 (3.7E 11) 1 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 12) 100 (3.7E 12) 100 (3.7E 12)
Krypton-77 Krypton-79 Krypton-81 Krypton-83m Krypton-85 Krypton-85 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-135 Lanthanum-137 Lanthanum-138 Lanthanum-140 Lanthanum-141 Lanthanum-142 Lanthanum-143 Lead-195m Lead-198 Lead-199 Lead-200 Lead-201 Lead-201	36 36 36 36 36 36 37 57 57 57 57 57 57 57 57 57 57 57 57 82 82 82 82 82	1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 11) 10 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 12) 1000 (3.7E 11) 1 (3.7E 10) 10 (3.7E 11) 1000 (3.7E 13) 1000 (3.7E 12) 1000 (3.7E 12) 1000 (3.7E 12) 100 (3.7E 12) 100 (3.7E 12) 100 (3.7E 12)
Krypton-77 Krypton-79 Krypton-83 Krypton-85 Krypton-85 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-132 Lanthanum-135 Lanthanum-137 Lanthanum-140 Lanthanum-140 Lanthanum-141 Lanthanum-142 Lanthanum-143 Lead-195 Lead-199 Lead-199 Lead-200 Lead-201 Lead-201 Lead-202 Lead-202 Lead-202	36 36 36 36 36 36 36 57 57 57 57 57 57 57 57 57 57 57 57 57	1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 11) 10 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 13) 100 (3.7E 13) 10 (3.7E 11) 1 (3.7E 10) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 12) 1000 (3.7E 12) 100 (3.7E 11) 1 (3.7E 10)
Krypton-77 Krypton-79 Krypton-89 Krypton-85 Krypton-85 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-132 Lanthanum-137 Lanthanum-138 Lanthanum-140 Lanthanum-140 Lanthanum-141 Lanthanum-142 Lanthanum-142 Lead-195m Lead-198 Lead-199 Lead-200 Lead-201 Lead-202m Lead-202 Lead-203	36 36 36 36 36 36 37 57 57 57 57 57 57 57 57 57 57 57 57 57	1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 13) 10 (3.7E 11) 10 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 12) 1000 (3.7E 12) 1000 (3.7E 11) 1 (3.7E 10) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 12) 1000 (3.7E 12) 1000 (3.7E 12) 100 (3.7E 11) 1 (3.7E 10) 10 (3.7E 11)
Krypton-77 Krypton-79 Krypton-87 Krypton-85 Krypton-85 Krypton-87 Krypton-87 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-135 Lanthanum-135 Lanthanum-140 Lanthanum-140 Lanthanum-141 Lanthanum-142 Lanthanum-142 Lanthanum-143 Lead-195 Lead-198 Lead-199 Lead-200 Lead-201 Lead-202 Lead-202 Lead-203 Lead-205	36 36 36 36 36 36 36 57 57 57 57 57 57 57 82 82 82 82 82 82 82 82	1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 11) 10 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 13) 100 (3.7E 13) 10 (3.7E 11) 1 (3.7E 10) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 12) 1000 (3.7E 12) 100 (3.7E 11) 1 (3.7E 10)
Krypton-77 Krypton-79 Krypton-89 Krypton-85 Krypton-85 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-132 Lanthanum-137 Lanthanum-138 Lanthanum-140 Lanthanum-140 Lanthanum-141 Lanthanum-142 Lanthanum-142 Lead-195m Lead-198 Lead-199 Lead-200 Lead-201 Lead-202m Lead-202 Lead-203	36 36 36 36 36 36 37 57 57 57 57 57 57 57 57 57 57 57 57 57	1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 12) 1000 (3.7E 13) 10 (3.7E 11) 10 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 13) 100 (3.7E 13) 10 (3.7E 11) 1 (3.7E 10) 10 (3.7E 13) 100 (3.7E 13) 100 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 12) 1000 (3.7E 12) 100 (3.7E 12)
Krypton-77 Krypton-79 Krypton-89 Krypton-85 Krypton-85 Krypton-87 Krypton-87 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-135 Lanthanum-135 Lanthanum-140 Lanthanum-140 Lanthanum-142 Lanthanum-143 Lead-195 Lead-198 Lead-199 Lead-200 Lead-201 Lead-202 Lead-202 Lead-203 Lead-205 Lead-205 Lead-209	36 36 36 36 36 36 36 57 57 57 57 57 57 57 57 82 82 82 82 82 82 82 82 82	1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 12) 1000 (3.7E 13) 10 (3.7E 11) 10 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 13) 100 (3.7E 13) 10 (3.7E 11) 1 (3.7E 10) 10 (3.7E 11) 1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 12) 1000 (3.7E 12) 100 (3.7E 12)
Krypton-77 Krypton-79 Krypton-89 Krypton-85 Krypton-85 Krypton-87 Krypton-87 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-135 Lanthanum-135 Lanthanum-140 Lanthanum-140 Lanthanum-141 Lanthanum-142 Lanthanum-143 Lead-195 Lead-199 Lead-200 Lead-201 Lead-201 Lead-202 Lead-203 Lead-205 Lead-209 Lead-209 Lead-209 Lead-210	36 36 36 36 36 36 37 57 57 57 57 57 57 57 57 82 82 82 82 82 82 82 82 82 82 82 82	1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 11) 10 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 13) 100 (3.7E 13) 10 (3.7E 11) 1 (3.7E 10) 10 (3.7E 11) 1000 (3.7E 13) 1000 (3.7E 12) 1000 (3.7E 12) 100 (3.7E 12)
Krypton-77 Krypton-79 Krypton-89 Krypton-85 Krypton-85 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-135 Lanthanum-137 Lanthanum-138 Lanthanum-140 Lanthanum-141 Lanthanum-142 Lanthanum-143 Lead-195 Lead-199 Lead-199 Lead-200 Lead-201 Lead-202 Lead-203 Lead-203 Lead-205 Lead-209 Lead-209 Lead-210 Lead-211	36 36 36 36 36 36 37 57 57 57 57 57 57 57 57 57 57 82 82 82 82 82 82 82 82 82 82 82 82	1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 11) 10 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 13) 100 (3.7E 13) 10 (3.7E 11) 1 (3.7E 10) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 12) 100 (3.7E 13)
Krypton-77 Krypton-79 Krypton-87 Krypton-83m Krypton-85m Krypton-85 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-132 Lanthanum-135 Lanthanum-140 Lanthanum-140 Lanthanum-141 Lanthanum-142 Lanthanum-143 Lead-195m Lead-199 Lead-200 Lead-201 Lead-201 Lead-202 Lead-203 Lead-205 Lead-205 Lead-209 Lead-209 Lead-210 Lead-211 Lead-212	36 36 36 36 36 36 37 57 57 57 57 57 57 57 57 57 57 82 82 82 82 82 82 82 82 82 82 82 82 82	1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 11) 10 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 13) 100 (3.7E 13) 10 (3.7E 11) 1 (3.7E 10) 10 (3.7E 11) 1000 (3.7E 13) 1000 (3.7E 12) 1000 (3.7E 12) 100 (3.7E 12)
Krypton-77 Krypton-79 Krypton-89 Krypton-85 Krypton-85 Krypton-87 Krypton-88 Lanthanum-131 Lanthanum-135 Lanthanum-137 Lanthanum-138 Lanthanum-140 Lanthanum-141 Lanthanum-142 Lanthanum-143 Lead-195 Lead-199 Lead-199 Lead-200 Lead-201 Lead-202 Lead-203 Lead-203 Lead-205 Lead-209 Lead-209 Lead-210 Lead-211	36 36 36 36 36 36 37 57 57 57 57 57 57 57 57 57 57 82 82 82 82 82 82 82 82 82 82 82 82	1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 1000 (3.7E 13) 100 (3.7E 11) 10 (3.7E 11) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 13) 100 (3.7E 13) 10 (3.7E 11) 1 (3.7E 10) 10 (3.7E 11) 1000 (3.7E 13) 100 (3.7E 12) 100 (3.7E 13)

Lutetium-169	71	10 (3.7E 11)
Lutetium-170	71	10 (3.7E 11)
Lutetium-171	71	10 (3.7E 11)
Lutetium-172	71	10 (3.7E 11)
Lutetium-173	71	100 (3.7E 12)
Lutetium-174m	71	10 (3.7E 11)
	71	10 (3.7E 11)
Lutetium-174		
Lutetium-176m	71	1000 (3.7E 13)
Lutetium-176	71	1 (3.7E 10)
	71	
Lutetium-177m		
Lutetium-177	71	100 (3.7E 12)
Lutetium-178m	71	1000 (3.7E 13)
Lutetium-178	71	1000 (3.7E 13)
Lutetium-179	71	1000 (3.7E 13)
Magnesium-28	12	10 (3.7E 11)
Manganese-51	25	1000 (3.7E 13)
Manganese-52m	25	1000 (3.7E 13)
Manganese-52	25	10 (3.7E 11)
Manganese-53	25	1000 (3.7E 13)
	25	10 (3.7E 11)
Manganese-54		
Manganese-56	25	100 (3.7E 12)
Mendelevium-257	101	100 (3.7E 12)
	101	1 (3.7E 10)
Mendelevium-258		
Mercury-193m	80	10 (3.7E 11)
Mercury-193	80	100 (3.7E 12)
	80	0.1 (3.7E 9)
Hercury-194		
Mercury-195m	<b>8</b> 0	100 (3.7E 12)
Mercury-195	80	100 (3.7E 12)
Mercury-197m	80	1000 (3.7E 13)
Mercury-197	80	1000 (3.7E 13)
Mercury-199m	80	1000 (3.7E 13)
Mercury-203	80	10 (3.7E 11)
		17 1717 111
Molybdenum-90	42	100 (3.7E 12)
Molybdenum-93m	42	10 (3.7E 11)
Molybdenum-93	42	100 (3.7E 12)
	42	
Molybdenum-99		
Molybdenum-101	42	1000 (3.7E 13)
Neodymi um- 136	60	1000 (3.7E 13)
	60	
Neodymium-138		
Neodymium-139m	60	100 (3.7E 12)
Neodymium-139	60	1000 (3.7E 13)
	60	
Neodymium-141		1111 1111 1111
Neodymium-147	60	10 (3.7E 11)
Neodymium-149	60	100 (3.7E 12)
Neodymium-151	60	1000 (3.7E 13)
·		
Neptunium-232	93	1000 (3.7E 13)
Neptunium-233	93	1000 (3.7E 13)
Neptunium-234	93	10 (3.7E 11)
Neptunium-235	93	1000 (3.7E 13)
Neptunium-236 (1.2 E		
5 yr)	93	0.1 (3.7E 9)
	73	011 (3.12 ))
Neptunium-236		
(22.5 hr)	93	100 (3.7E 12)
Neptunium-237	93	0.01 (3.7E 8)
	93	
Neptunium-238		
Neptunium-239	93	100 (3.7° 12)
Neptunium-240	93	100 (3, _ 12)
Nickel-56	28	10 (3.7E 11)
Nickel-57	28	10 (3.7E 11)
Nickel-59	28	100 (3.7E 12)
Nickel-63	28	100 (3.7E 12)
Nickel-65	28	100 (3.7E 12)
Nickel-66	28	10 (3.7E 11)
Niobium-88	41	100 (3.7E 12)
	41	100 (3.7E 12)
Niobium-89 (66 min)		
Niobium-89 (122 min)	41	100 (3.7E 12)
Niobium-90	41	10 (3.7E 11)
Niobium-93m		
	41	
Niobium-94	41	10 (3.7E 11)
Niobium-95m	41	100 (3.7E 12)
		10 (3.7E 11)
Niobium-95	/ 4	
	41	
Niobium-96	41 41	10 (3.7E 11)
	41	10 (3.7E 11)
Niobium-97	41 41	10 (3.7E 11) 100 (3.7E 12)
	41	10 (3.7E 11)

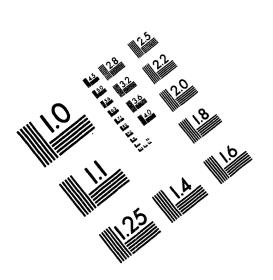
Osmium-180	76	1000 (3.7E 13)
Osmium-181	76	100 (3.7E 12)
Osmium-182	76	100 (3.7E 12)
Osmium-185	76	10 (3.7E 11)
Osmium-189m	76	1000 (3.7E 13)
Osmi um-191m	76	1000 (3.7E 13)
Osmium-191	76	100 (3.7E 12)
Osmium-193	76	100 (3.7E 12)
Osmium-194	76	1 (3.7E 10)
Palladium-100	46	100 (3.7E 12)
Palladium-101	46	100 (3.7E 12)
Palladium-103	46	100 (3.7E 12)
Palladium-107	46	100 (3.7E 12)
Palladium-109	46	1000 (3.7E 13)
Phosphorus-32	15	0.1 (3.7E 9)
Phosphorus-33	15	1 (3.7E 10)
Platinum-186	78	100 (3.7E 12)
Platinum-188	78	100 (3.7E 12)
Platinum-189	78	100 (3.7E 12)
Platinum-191	78	100 (3.7E 12)
Platinum-193m	78	100 (3.7E 12)
Platinum-193	78	1000 (3.7E 13)
Platinum-195m	78	100 (3.7E 12)
Platinum-197m	78	1000 (3.7E 13)
Platinum-197	78	1000 (3.7E 13)
Platinum-199	78	1000 (3.7E 13)
Platinum-200	78	100 (3.7E 12)
Plutonium-234	94	1000 (3.7E 13)
Plutonium-235	94	1000 (3.7E 13)
Plutonium-236	94	0.1 (3.7E 9)
Plutonium-237	94	1000 (3.7E 13)
Plutonium-238	94	0.01 (3.7E 8)
Plutonium-239	94	0.01 (3.7E 8)
Plutonium-240	94	0.01 (3.7E 8)
Plutonium-241	94	1 (3.7E 10)
Plutonium-242	94 94	0.01 (3.7E 8) 1000 (3.7E 13)
Plutonium-243	94 94	0.01 (3.7E 8)
Plutonium-244 Plutonium-245	94	100 (3.7E 12)
Potonium-203	84	100 (3.7E 12)
Polonium-205	84	100 (3.7E 12)
Polonium-207	84	10 (3.7E 11)
Polonium-210	84	0.01 (3.7E 8)
Potassium-40	19	1 (3.7E 10)
Potassium-42	19	100 (3.7E 12)
Potassium-43	19	10 (3.7E 11)
Potassium-44	19	100 (3.7E 12)
Potassium-45	19	1000 (3.7E 13)
Praseodymium-136	59	1000 (3.7E 13)
Praseodymium-137	59	1000 (3.7E 13)
Praseodymium-138m	59	100 (3.7E 12)
Praseodymium-139	59	1000 (3.7E 13)
Praseodymium-142m	59	1000 (3.7E 13)
Praseodymium-142		100 (3.7E 12)
Praseodymium-143	59	10 (3.7E 11)
Praseodymium-144	59	1000 (3.7E 13)
Praseodymium-145	59	1000 (3.7E 13)
Praseodymium-147	59	1000 (3.7E 13)
Promethium-141	61	1000 (3.7E 13)
Promethium-143	61	100 (3.7E 12)
Promethium-144	61	10 (3.7E 11)
Promethium-145	61	100 (3.7E 12)
Promethium-146	61	10 (3.7E 11)
Promethium-147	61 41	10 (3.7E 11) 10 (3.7E 11)
Promethium-148m	61	
Promethium-148	61 41	10 (3.7E 11) 100 (3.7E 12)
Promethium-149	61 41	100 (3.7E 12)
Promethium-150	61 41	100 (3.7E 12)
Promethium-151	61	100 (3.76 12)

		12.0
Protactinium-227	91	100 (3.7E 12)
Protactinium-228	91	10 (3.7E 11)
Protectinium-230	91	10 (3.7E 11)
Protactinium-231	91	0.01 (3.7E 8)
Protectinium-232	91	10 (3.7E 11)
Protactinium-233	91	100 (3.7E 12)
Protactinium-234	91	10 (3.7E 11)
Radium-223	88	
		1 (3.7E 10)
Radium-224	88	10 (3.7E 11)
Radium-225	88	1 (3.7E 10)
Radium-226¢	88	0.1 (3.7E 9)
Radium-227	88	1000 (3.7E 13)
Radium-228	88	0.1 (3.7E 9)
Radon-220	86	0.1 (3.7E 9)
Radon-222	86	0.1 (3.7E 9)
Rhenium-177	75	1000 (3.7E 13)
Rhenium-178	75	1000 (3.7E 13)
Rhenium-181	75	
	75	100 (3.7E 12)
Rhenium-182	***	40 45 55 441
(12.7 hr)	75	10 (3.7E 11)
Rhenium-182		
(64.0 hr)	75	10 (3.7E 11)
Rhenium-184m	75	10 (3.7E 11)
Rhenium-184	75	10 (3.7E 11)
Rhenium-186m	75	10 (3.7E 11)
Rhenium-184 Rhenium-186 Rhenium-186 Rhenium-186	75	100 (3.7E 12)
Rhenium-187	75	1000 (3.7E 13)
Phonium 182m	75	
Rhenium-188m Rhenium-188		1000 (3.7E 13)
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	<u>75</u>	1000 (3.7E 13)
Rhenium-189	75	1000 (3.7E 13)
Rhodium-99m	45	100 (3.7E 12)
Rhodium-99	45	10 (3.7E 11)
Rhodium-100	45	10 (3.7E 11)
Rhodium-101m	45	100 (3.7E 12)
Rhodium-101	45	10 (3.7E 11)
Rhodium-102m	45	10 (3.7E 11)
Rhodium-102	45	10 (3.7E 11)
Rhodium-103m	45	1000 (3.7E 13)
Rhodium-105	45	100 (3.7E 12)
Rhodium-106m	45	
		10 (3.7E 11)
Rhodium-107	45	1000 (3.7E 13)
Rubidium-79	37	1000 (3.7E 13)
Rubidium-81m	37	1000 (3.7E 13)
Rubidium-81	37	100 (3.7E 12)
Rubidium-82m	37	10 (3.7E 11)
Rubidium-83	37	10 (3.7E 11)
Rubidium-84	37	10 (3.7E 11)
Rubidium-86	37	10 (3.7E 11)
Rubidium-88	37	1000 (3.7E 13)
Rubidium-89	37	1000 (3.7E 13)
Rubidium-87	37	10 (3.7E 11)
Ruthenium-94	44	1000 (3.7E 13)
Ruthenium-97	44	100 (3.7E 12)
Ruthenium-103	44	10 (3.7E 11)
Ruthenium-105	44	100 (3.7E 12)
Ruthenium-106	44	1 (3.7E 10)
Samarium-141m	62	1000 (3.7E 13)
		1000 (3.7E 13)
Samarium-141	62	
Samarium-142	62	1000 (3.7E 13)
Samarium-145	62	100 (3.7E 12)
Samarium-146	62	0.01 (3.7E 8)
Samarium-147	62	0.01 (3.7E 8)
Samarium-151	62	10 (3.7E 11)
Samarium-153	62	100 (3.7E 12)
Samarium-155	62	1000 (3.7E 13)
Samarium-156	62	100 (3.7E 12)
	21	1000 (3.7E 13)
Scandium-43		
Scandium-44m	21	10 (3.7E 11)
Scandium-44	21	100 (3.7E 12)
Scandium-46	21	10 (3.7E 11)
Scandium-47	21	100 (3.7E 12)
Scandium-48	21	10 (3.7E 11)
Scandium-49	21	1000 (3.7E 13)

Selenium-70	34	1000 (3.7E 13)
Selenium-73m	34	100 (3.7E 12)
Selenium-73	34	10 (3.7E 11)
Selenium-75	34	10 (3.7E 11)
Selenium-79	34	10 (3.7E 11)
Selenium-81m	34	1000 (3.7E 13)
Selenium-81	34	1000 (3.7E 13)
Selenium-83	34	1000 (3.7E 13)
Silicon-31	14	1000 (3.7E 13)
Silicon-32 Silver-102	14 47	1 (3.7E 10) 100 (3.7E 12)
Silver-103	47	100 (3.7E 12) 1000 (3.7E 13)
Silver-104m	47	1000 (3.7E 13)
Silver-104	47	1000 (3.7E 13)
Silver-105	47	10 (3.7E 11)
Silver-106m	47	10 (3.7E 11)
Silver-106	47	1000 (3.7E 13)
Silver-108m	47	10 (3.7E 11)
Silver-110m	47	10 (3.7E 11)
Silver-111 Silver-112	47 47	10 (3.7E 11)
Silver-115	47	100 (3.7E 12) 1000 (3.7E 13)
Sodium-22	11	10 (3.7E 11)
Sodium-24	11	10 (3.7E 11)
Strontium-80	38	100 (3.7E 12)
Strontium-81	38	1000 (3.7E 13)
Strontium-83	38	100 (3.7E 12)
Strontium-85m	38	1000 (3.7E 13)
Strontium-85	38 38	10 (3.7E 11)
Strontium-87m Strontium-89	38	100 (3.7E 12) 10 (3.7E 11)
Strontium-90	38	0.1 (3.7E 9)
Strontium-91	38	10 (3.7E 11)
Strontium-92	38	100 (3.7E 12)
Sulfur-35	16	1 (3.7E 10)
Tantalum-172	<u>73</u>	100 (3.7E 12)
Tantalum-173	73	100 (3.7E 12)
Tantalum-174	73 73	100 (3.7E 12) 100 (3.7E 12)
Tantalum-175 Tantalum-176	73 73	10 (3.7E 12)
Tantalum-177	73	1000 (3.7E 13)
Tantalum-178	73	1000 (3.7E 13)
Tantalum-179	73	1000 (3.7E 13)
Tantalum-180m	73	1000 (3.7E 13)
Tantalum-180	73	100 (3.7E 12)
Tantalum-182m	73	1000 (3.7E 13)
Tantalum-182	73 73	10 (3.7E 11) 100 (3.7E 12)
Tantalum-183 Tantalum-184	73	10 (3.7E 12)
Tantalum-185	73	1000 (3.7E 13)
Tantalum-186	73	1000 (3.7E 13)
Technetium-93m	43	1000 (3.7E 13)
Technetium-93	43	100 (3.7E 12)
Technetium-94m	43	100 (3.7E 12)
Technetium-94	43	10 (3.7E 11)
Technetium-96m Technetium-96	43 43	1000 (3.7E 13) 10 (3.7E 11)
Technetium-97m	43	100 (3.7E 12)
Technetium-97	43	100 (3.7E 12)
Technetium-98	43	10 (3.7E 11)
Technetium-99m	43	100 (3.7E 12)
Technetium-99	43	10 (3.7E 11)
Technetium-101	43	1000 (3.7E 13)
Technetium-104	43 53	1000 (3.7E 13) 1000 (3.7E 13)
Tellurium-116 Tellurium-121m	52 52	1000 (3.7E 13) 10 (3.7E 11)
Tellurium-121	52 52	10 (3.7E 11)
Tellurium-123m	52	10 (3.7E 11)
Tellurium-123	52	10 (3.7E 11)
Tellurium-125m	52	10 (3.7E 11)
Tellurium-127m	52	10 (3.7E 11)
Tellurium-127	52	1000 (3.7E 13)
Tellurium-129m	52 53	10 (3.7E 11)
Tellurium-129	52	1000 (3.7E 13)

Tellurium-131m	52	10 (3.7E 11)
Tellurium-131	52	1000 (3.7E 13)
Tellurium-132	52	10 (3.7E 11)
Tellurium-133m	52	1000 (3.7E 13)
Tellurium-133	52	1000 (3.7E 13)
Tellurium-134	52	1000 (3.7E 13)
Terbium-147	65	100 (3.7E 12)
Terbium-149	65	100 (3.7E 12)
Terbium-150	65	100 (3.7E 12)
Terbium-151	65	10 (3.7E.11)
Terbium-153	65	100 (3.7E 12)
		·
Terbium-154	65	10 (3.7E 11)
Terbium-155	65	100 (3.7E 12)
Terbium-156m		
	65	1000 (3.7E 13)
(5.0 hr)	65	1000 (3.76 13)
Terbium-156m		
(24.4 hr)	65	1000 (3.7E 13)
<b>1</b>	65	
Terbium-156		10 (3.7E 11)
Terbium-157	65	100 (3.7E 12)
Terbium-158	65	10 (3.7E 11)
Terbium-160	65	10 (3.7E 11)
Terbium-161	65	100 (3.7E 12)
Thallium-194m	81	100 (3.7E 12)
Thallium-194	81	1000 (3.7E 13)
Thallium-195	81	100 (3.7E 12)
Thallium-197	81	100 (3.7E 12)
Thallium-198m	81	100 (3.7E 12)
Thailium-198	81	10 (3.7E 11)
Thallium-199	81	100 (3.7E 12)
Thallium-200	81	10 (3.7E 11)
Thallium-201	81	1000 (3.7E 13)
Thallium-202	81	10 (3.7E 11)
Thallium-204	81	10 (3.7E 11)
Thorium-226	90	100 (3.7E 12)
Thorium-227	90	1 (3.7E 10)
Thorium-228	90	0.01 (3.7E 8)
Thorium-229	90	0.001 (3.7E 7)
Thorium-230	90	0.01 (3.7E 8)
Thorium-231	<del>9</del> 0	100 (3.7E 12)
Thorium-2326	90	0.001 (3.7E 7)
Thorium-234	90	100 (3.7E 12)
Thulium-162	69	1000 (3.7E 13)
Thulium-166	69	10 (3.7E 11)
Thulium-167	69	100 (3.7E 12)
	69	
Thulium-170		
Thulium-171	69	100 (3.7E 12)
Thulium-172	69	100 (3.7E 12)
Thulium-173	69	100 (3.7E 12)
***************************************		
Thulium-175	69	1000 (3.7E 13)
Tin-110	50	100 (3.7E 12)
Tin-111	50	1000 (3.7E 13)
Tin-113	50	10 (3.7E 11)
Tin-117m	50	100 (3.7E 12)
Tin-119m	50	10 (3.7E 11)
Tin-121m		10 (3.7E 11)
	50	
7 in-121	50	1000 (3.7E 13)
Tin-123m	50	1000 (3.7E 13)
Tin-123	50	10 (3.7E 11)
Tin-125	50	10 (3.7E 11)
Tin-126	50	1 (3.7E 10)
Tin-127	50	100 (3.7E 12)
• • • • • • • • • • • • • • • • • • • •		
Tin-128	50	1000 (3.7E 13)
Titanium-44	22	1 (3.7E 10)
	22	1000 (3.7E 13)
Titanium-45		
Titanium-45		1000 /2 72 471
Tungsten-176	74	1000 (3.7E 13)
		100 (3.7E 12)
Tungsten-176 Tungsten-177	74 74	100 (3.7E 12)
Tungsten-176 Tungsten-177 Tungsten-178	74 74 74	100 (3.7E 12) 100 (3.7E 12)
Tungsten-176 Tungsten-177 Tungsten-178 Tungsten-179	74 74 74 74	100 (3.7E 12) 100 (3.7E 12) 1000 (3.7E 13)
Tungsten-176 Tungsten-177 Tungsten-178	74 74 74	100 (3.7E 12) 100 (3.7E 12)

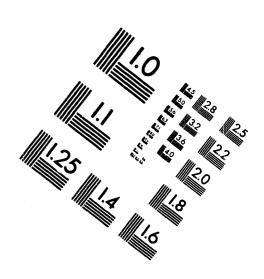
		40 49 70 441
Tungsten-185	74	10 (3.7E 11)
Tungsten-187	74	100 (3.7E 12)
Tungsten-188	74	10 (3.7E 11)
Uranium-230	92	1 (3.7E 10)
Uranium-231	92	1000 (3.7E 13)
	92	0.01 (3.7E 8)
Uranium-232		0.01 (3.76 0)
Uranium-233	92	0.1 (3.7E 9)
Uranium-234¢	92	0.1 (3.7E 9)
Uranium-235ø	92	0.1 (3.7E 9)
Uranium-236	92	0.1 (3.7E 9)
Uranium-237	92	100 (3.7E 12)
	92	0.14 (3.7E 9)
Uranium-238¢		
Uranium-239	92	1000 (3.7E 13)
Uranium-240	92	1000 (3.7E 13)
Vanadium-47	23	1000 (3.7E 13)
Vanadium-48	23	10 (3.7E 11)
Vanadium-49	23	1000 (3.7E 13)
Xenon-120	54	100 (3.7E 12)
Xenon-121	54	10 (3.7E 11)
Xenon-122	54	100 (3.7E 12)
Xenon-123	54	10 (3.7E 11)
Xenon-125	54	100 (3.7E 12)
Xenon-127	54	100 (3.7E 12)
Xenon-129m	54	1000 (3.7E 13)
Xenon-131m	54	1000 (3.7E 13)
	54	1000 (3.7E 13)
Xenon-133m		
Xenon-133	54	1000 (3.7E 13)
Xenon-135m	54	10 (3.7E 11)
Xenon-135	54	100 (3.7E 12)
Xenon-138	54	10 (3.7E 11)
Ytterbium-162	70	1000 (3.7E 13)
Ytterbium-166	70	10 (3.7E 11)
	70	
Ytterbium-167		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Ytterbium-169	70	10 (3.7E 11)
Ytterbium-175	70	100 (3.7E 12)
Ytterbium-177	70	1000 (3.7E 13)
Ytterbium-178	70	1000 (3.7E 13)
Yttrium-86m	39	1000 (3.7E 13)
Yttrium-86	39	10 (3.7E 11)
	39	10 (3.7E 11)
Yttrium-87		
Yttrium-88	39	10 (3.7E 11)
Yttrium-90m	39	100 (3.7E 12)
Yttrium-90	39	10 (3.7E 11)
Yttrium-91m	39	1000 (3.7E 13)
Yttrium-91	39	10 (3.7E 11)
Yttrium-92	39 39	100 (3.7E 12)
Yttrium-93	39	100 (3.7E 12)
Yttrium-94	39	1000 (3.7E 13)
Yttrium-95	39	1000 (3.7E 13)
Zinc-62	30	100 (3.7E 12)
Zinc-63	30	1000 (3.7E 13)
Zinc-65	30	
Zinc-69m	30	100 (3.7E 12)
Zinc-69	30	1000 (3.7E 13)
Zinc-71m	30	100 (3.7E 12)
Zinc-72	30	100 (3.7E 12)
Zirconium-86	40	100 (3.7E 12)
		10 (3.7E 12)
Zirconium-88	40	10 (3.72 11)
Zirconium-89	40	100 (3.7E 12)
Zirconium-93	40	1 (3.7E 10)
Zirconium-95	40	10 (3.7E 11)
Zirconium-97	40	10 (3.7E 11)
	·•	,

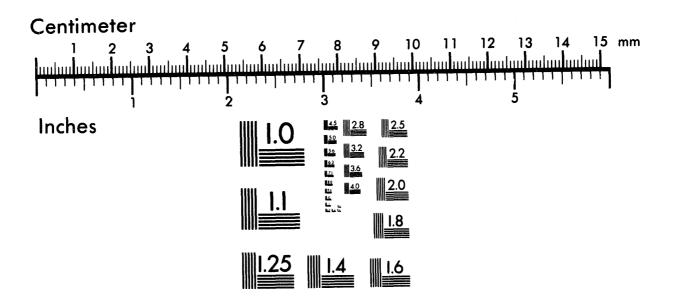


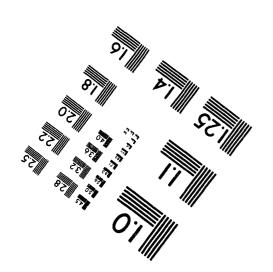


### **Association for Information and Image Management**

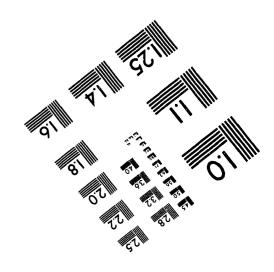
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Ci -- Curie. The curie represents a rate of radioactive decay. One curie is the quantity of any radioactive nuclide which undergoes 3.7E 10 disintegrations per second. Bq -- Becquerel. The becquerel represents a rate of radioactive decay. One becquerel is the quantity of any radioactive nuclide which undergoes one disintegration per second. One curie is equal to 3.7E 10 becquerel.
\* -- Final RQs for all radionuclides apply to chemical compounds containing the radionuclides and elemental forms regardless of the diameter of pieces of solid material. & -- The adjusted RQ of one curie applies to all radionuclides not otherwise listed. Whenever the RQs in Table 302.4 and this appendix to the table are in conflict, the lowest RQ shall apply. For example, uranyl acetate and uranyl nitrate have adjusted RQs shown in Table 302.4 of 100 pounds, equivalent to about one-tenth the RQ level for uranium-238 listed in this appendix. E -- Exponent to the base 10. For example, 1.3E 2 is equal to 130 while 1.3E 3 is equal to 1300. m -- Signifies a nuclear isomer which is a radionuclide in a higher energy metastable state relative to the parent isotope. Notification requirements for releases of mixtures or solutions of radionuclides can be found in Section 302.6(b) of this rule. Final RQs for the following four common radionuclide mixtures are provided: radium-226 in secular equilibrium with its daughters (0.053 curie); natural uranium (0.1 curie); natural uranium in secular equilibrium with its daughters (0.052 curie); and natural thorium in secular equilibrium with its daughters (0.011 curie).

[54 FR 33449, August 14, 1989; 54 FR 41407, October 6, 1989; 54 FR 47022, November 8, 1989; 54 FR 50968, December 11, 1989; 54 FR 53057, December 27, 1989; 55 FR 5340, Feb. 14, 1990; 55 FR 11798, March 29, 1990; 55 FR 18496, May 2, 1990; 55 FR 22720, June 1, 1990; 55 FR 26987, June 29, 1990; 55 FR 50450, December 6, 1990; 56 FR 21955, May 13, 1991; 57 FR 37284, August 18, 1992; 57 FR 47376, Oct. 15, 1992]

### APPENDIX III

List of EPCRA Extremely Hazardous Substances and their Threshold Planning Quantities

40 CFR 355 Appendix A (as of November, 1993)

# APPENDIX III - List of EPCRA Extremely Hazardous Substances and their Threshold Planning Quantities (40 CFR 355 Appendix A)

Chemical name	Cas No.	Thresh- hold planning qty (lbs)	Report- able qty* (lbs)
	75 04 E		
Acetone Cyanohydrin	75-86-5	1,000	10
Acetone /Thiosemicarbazide	1752-30-3 107-02-8	1,000/10,000 500	1
Acrolein Acrolein		1,000/10,000	
Acrylamide	79-06-1 107-13-1		
Acrylonitrile	814-68-6	10,000	100 d,
Acrylyl chloride	111-69-3	100	1 e,
Adiponitrile	116-06-3	1,000 100/10,000	1 e, 1
Aldicarb	309-00-2		i
Aldrin		500/10,000	100
Allyl Alcohol	107-18-6	1,000 500	100
Allylamine	107-11-9 20859-73-8	500 500	100
Atuminum Phosphide	54-62-6		100
Aminopterin	78-53-5	500/10,000 500	i
Amiton Amiton Oxalate	3734-97-2	100/10,000	i
Ammonia	7664-41-7	500	100
	300-62-9	1,000	1
Amphetamine Aniline	62-53-3	1,000	5,000 d
	88-05-1	500	1
Aniline, 2,4,6-Trimethyl- Antimony Pentafluoride	7783-70-2	500	i
Antimony Pentalluoride	1397-94-0	1,000/10,000	
ANTU	86-88-4	500/10,000	1 c, 100
Arsenic Pentoxide	1303-28-2	100/10,000	100
Arsenous Oxide	1327-53-3	100/10,000	i d
Arsenous Trichloride	7784-34-1	500	1 4
Arsine	7784-42-1	100	i
	2642-71-9	100/10,000	i
Azinphos-Ethyl	86-50-0	10/10,000	i
Azinphos-Methyl	98-87-3	500	5,000
Benzal Chloride	98-16-8	500	1,000
Benzanamine, 3-(Trifluoromethyl)-			i
Benzene, 1-(Chloromethyl)-4-Nitro-	100-14-1	500/10,000	i
Benzenearsonic Acid	98-05-5	10/10,000	•
Benzimidazole, 4,5-Dichloro-2-	7445 24 2	E00/10 000	1 e
(Trifluoromethyl)-	3615-21-2	500/10,000	
Benzotrichloride	98-07-7	500	10
Benzyl Chloride	100-44-7	500	100
Benzyl Cyanide	140-29-4	500	1 e,
Bicyclo[2.2.1] Heptane-2-Carbonitrile,		500/10,000	1
5-Chloro-6-((((Methylamino)Carbonyl)	•		
Oxy)limino)-,(1s-(1-alpha,2-beta,			
4-alpha,5-alpha,6E))	1011 15 5	F00 :40 000	_
Bitoscanate	4044-65-9	500/10,000	!
Bis(Chloromethyl)ketone	534-07-6	10/10,000	1
Boron Trichloride	10294-34-5	500	1
Boron Trifluoride	7637-07-2	500	1
Boron Trifluoride Compound With	353-42-4	1,000	1
Methyl Ether (1:1)			
Bromadiolone	28772-56-7	100/10,000	1
Bromine	7726-95-6	500	1 e,
Cadmium Oxide	1306-19-0	100/10,000	1
Cadmium Stearate	2223-93-0	1,000/10,000	1 c
Calcium Arsenate	7778-44-1	500/10.000	1

Camphechlor	8001-35-2	500/10,000	1 d
Cantharidin	56-25-7	100/10,000	1 e
Carbachol Chloride	51-83-2	500/10,000	1 e
Carbamic acid, methyl-, 0-((2,4-			
Dimethyl-1,3-Dithiolan-2-yl) Methylene)Amino)-	26419-73-8	100/10,000	1 e
Carbofuran	1563-66-2	10/10,000	10
Carbon Disulfide	75-15-0	10,000	100 l
Carbophenothion	786-19-6	500	1 e
Chlordane	57-74-9	1,000	1 d
Chlorfenvinfos	470-90-6	500	1 e
Chlorine	7782-50-5	100	10
Chlomephos	24934-91-6	500	1 e
Chlormequat Chloride	999-81-5	100/10,000	1 e,h 1 e
Chloroacetic Acid	79-11-8 107-07-3	100/10,000 500	1 e
Chloroethanol Chloroethyl Chloroformate	627-11-2	1,000	1 e
Chloroform	67-66-3	10,000	10 d,1
Chloromethyl Ether	542-88-1	100	10 d,h
Chloromethyl Methyl Ether	107-30-2	100	10 e,d
Chlorophacinone	3691-35-8	100/10,000	1 e
Chloroxuron	1982-47-4	500/10,000	1 e
Chlorthiophos	21923-23-9	500	1 e,h
Chromic Chloride	10025-73-7	1/10,000	1 e 1 e,h
Cobalt Carbonyl	10210-68-1	10/10,000	1 e,h 1 e
Cobalt,((2,2'-(1,2-Ethanediylbis	62207-76-5	100/10,000	1 6
(Nitromethylidyne))Bis(6-Fluoro- phenolato))(2-)-N,N',O,O'),			
Colchicine	64-86-8	10/10,000	1 e,h
Caumaphos	56-72-4	100/10,000	10
Coumatetrayl	5836-29-3	500/10,000	1 e
Cresot, o-	95-48-7	1,000/10,000	1,000 d
Crimidine	535-89-7	100/10,000	1 e
Crotonaldehyde	4170-30-3	1,000	100
Crotonaldehyde, (E)-	123-73-9	1,000	100 1,000
Cyanogen Bromide	506-68-3	500/10,000	•
Cyanogen lodide	506-78-5	1,000/10,000	1 e
Cyanophos	2636-26-2	1,000	1 e 1 e
Cyanuric Fluoride	675-14-9 66-81-9	100 100/10,000	1 e 1 e
Cycloheximide	108-91-8	10,000	1 e, l
Cyclohexylamine Decaborane (14)	17702-41-9	500/10,000	1 e
Demeton	8065-48-3	500	1 e
Demeton-S-Methyl	919-86-8	500	1 e
Dialifor	10311-84-9	100/10,000	1 e
Diborane	19287-45-7	100	1 e
Dichloroethyl ether	111-44-4	10,000	10 d 1 e
Dichloromethylphenylsilane	149-74-6 62-73-7	1,000	10
Dichlorvos	141-66-2	1,000 100	1 e
Dicrotophos	1464-53-5	500	10 d
Diepoxybutane Diethyl Chlorophosphate	814-49-3	500	1 e,h
Diethylcarbamizine Citrate	1642-54-2	100/10,000	1 e
Digitoxin	71-63-6	100/10,000	1 c,e
Diglycidyl Ether	2238-07-5	1,000	1 e
Digoxin	20830-75-5	10/10,000	1 e,h
Dimefox	115-26-4	500	1 e 10
Dimethoate	60-51-5 2524-0 <b>3</b> -0	500/10,000 500	10 1 e
Dimethyl Phosphorochloridothicate	77-78-1	500	100 d
Dimethyl Sulfate Dimethyl-p-Phenylenediamine	99-98-9	10/10,000	1 e
Dimethyldichlorosilane	75-78-5	500	1 e,h
Dimethylhydrazine	57-14-7	1,000	10 d
Dimetilan	644-64-4	500	1 e
Dinitrocresol	534-52-1	10/10,000	10
Dinoseb	88-85-7	100/10,000	1,000
Dinoterb	1420-07-1	500/10,000	1 e
Dioxathion	78-34-2	500	1 e 1 e
Diphacinone	82-66-6	10/10,000 100	1 e 100
Diphosphoramide, Octamethyl-	152-16-9 298-04-4	500	1
Disulfoton Dithiazanine Iodide	514-73-8	500/10,000	i e
Dithiobiuret	541-53-7	100/10,000	100
Emetine dihydrochloride	316-42-7	1/10,000	1 e,h

Endosulfan	115-29-7	10/10,000	1
Endothion	2778-04-3	500/10,000	1 e
Endrin	72-20-8	500/10,000	1
Epichlorohydrin	106-89-8	1,000	100 d,1
EPN .	2104-64-5	100/10,000	1 e
Ergocalciferol	50-14-6 379-79-3	1,000/10,000	1 c,e 1 e
Ergotamine tartrate Ethanesulfonyl Chloride, 2-Chloro-	1622-32-8	500/10,000 500	1 e 1 e
Ethanol, 1,2-Dichloro-, Acetate	10140-87-	1,000	1 e
Ethion	563-12-2	1,000	10
Ethoprophos	13194-48-4	1,000	1 e
Ethybis(2-Chloroethyl)Amine	538-07-8	500	1 e,h
Ethylene Fluorohydrin	<b>371-62-</b> 0	10	1 c,e
Ethylene Oxide	75-21-8	1,000	10 d,1
Ethylenediamine	107-15-3	10,000	5,000
Ethyleneimine	151-56-4	500	1 d
Ethylthiocyanate	542-90-5	10,000	1 e
Fenamiphos	22224-92-6	10/10,000	1 e
Fenitrothion	122-14-5	500	1 e
Fensul fothion	115-90-2	500	1 e,h
Fluenetil	4301-50-2 7782-41-4	100/10,000 500	1 e 10 k
Fluorine Fluoroacetamide	640-19-7	100/10,000	10 k 100 j
Fluoroacetic Acid	144-49-0	10/10,000	1 e
Fluoroacetyl Chloride	359-06-8	10	1 c,e
Fluorouracil	51-21-8	500/10,000	1 e
Fonofos	944-22-9	500	1 e
Formal dehyde	50-00-0	500	100 d,1
Formaldehyde cyanohydrin	107-16-4	1,000	1 e,h
Formetanate	23422-53-9	500/10,000	1 e,h
Formothion	2540-82-1	100	1 e
Formparanate	17702-57-7	100/10,000	1 e
Fosthietan	21548-32-3	500	1 e
Fuberidazole Furan	3878-19-1 110-00-9	100/10,000 500	1 e 100
Gallium Trichloride	13450-90-3	500/10,000	1 e
Hexachlorocyclopentadiene	77-47-4	100	10 d,h
Hexamethylenediamine, N,N'-Dibutyl-	4835-11-4	500	1 e
Hydrazine	302-01-2	1,000	1 d
Hydrocyanic Acid	74-90-8	100	10
Hydrogen Chloride (Gas Only)	7647-01-0	500	5,000 e,1
Hydrogen Fluoride	7664-39-3	100	100
Hydrogen peroxide (concentration	7722-84-1	1,000	1 e,l
greater than 52%)	7783-07-5	10	4 -
Hydrogen Selenide Hydrogen Sulfide	7783-06-4	500	1 e 100 l
Hydroquinone	123-31-9	500/10,000	1 1
Iron. Pentacarbonyl-	13463-40-6	100	i e`
Isobenzan	297-78-9	100/10,000	1 e
Isobutyronitrile	78-82-0	1,000	1 e,h
Isocyanic Acid 3,4-Dichlorophenyl Es	ster 102-36-3	500/10,000	1 e
Isodrin	465-73-6	100/10,000	1
Isofluorphate	55-91-4	100	100 c
Isophorone Diisocyanate	4098-71-9	100	1 b,e
Isopropyl Chloroformate	108-23-6	1,000	1 e
Isopropylmethylpyrazolyl	119-38-0	500	1 e
Dimethylcarbamate Lactonitrile	78-97-7	1,000	1 e
Leptophos	21609-90-5	500/10,000	1 e
Lewisite	541-25-3	10	1 c,e
· · · ·		· <del>-</del>	, 0,0
Lindane	58-89-9	1,000/10,000	1 d
Lithium Hydride	7580-67-8	100	1 b,e
Malononitrile	109-77-3	500/10,000	1,000
Manganese, Tricarbonyl Methylcyclo-	12108-13-3	100	1 e,h
pentadienyl			
Mechlorethamine	51-75-2	10	1 c,e
Mephosfolan	950-10-7	500	1 e
Mercuric Acetate	1600-27-7	500/10,000	1 e
Mercuric Chloride	7487-94-7	500/10,000	1 e

Mercuric Oxide	21908-53-2	500/10,000	1 e
Methacrolein Diacetate	10476-95-6	1,000	1 e
Methacrylic Anhydride	760-93-0	500	1 e
Methacrylonitrile	126-98-7	1,000	500 h
Methacryloyi Chioride	920-46-7	100	1 e
Methacryloyloxyethyl Isocyanate	30674-80-7	100	1 e,h
Methamidophos	10265-92-6	100/10,000	1 e
Methanesulfonyl Fluoride	558-25-8	1,000	1 e
Methidathion	950-37-8	500/10,000	1 e
Methiocarb	2032-65-7	500/10,000	10
Methomyl	16752-77-5	500/10,000	100 h
Methoxyethylmercuric Acetate	151-38-2	500/10,000	1 e
Methyl 2-Chloroacrylate	80-63-7	500	1 e
Methyl Bromide	74-83-9	1,000	1,000 i
Methyl Chloroformate	79-22-1	500	1,000 d,h
Methyl Hydrazine	60-34-4	500	10
Methyl Isocyanate	624-83-9	500	10
Methyl Isothiocyanate	556-61-6	500	1 b,e
Methyl Mercaptan	74-93-1	500	100 .
Methyl Phenkapton	3735-23-7	500	1 e
	676-97-1	100	1 b,e
Methyl Phosphoric Dichloride			
Methyl Thiocyanate	556-64-9	10,000	_
Methyl Vinyl Ketone	78-94-4	10	
Methylmercuric Dicyanamide	502-39-6	500/10,000	1 e
Methyltrichlorosilane	75-79-6	500	1 e,h
Metolcarb	1129-41-5	100/10,000	1 e
Mevinphos	7786-34-7	500	10
Mexacarbate	315-18-4	500/10,000	1,000
Mitomycin C	50-07-7	500/10,000	10 d
Monocrotophos	6923-22-4	10/10,000	1 e
Muscimol	2763-96-4	500/10,000	1,000
Mustard Gas	505-60-2	500	1 e,h
Nickel Carbonyl	13463-39-3	1	10 d
Nicotine	54-11-5	100	100 с
Nicotine Sulfate	65-30-5	100/10,000	100 e
Nitric Acid	7697-37-2	1,000	1,000
Nitric Oxide	10102-43-9	100	10 c
Nitrobenzene	98-95-3	10,000	1,000 l
Nitrocyclohexane	1122-60-7	500	1 e
Nitrogen Dioxide	10102-44-0	100	10
Nitrosodimethylamine	62-75-9	1,000	10 d,h
Norbormide	991-42-4	100/10,000	1 e
Organorhodium Complex (PMN-82-147)	0	10/10,000	1 e
Oxamyl	23135-22-0	100/10,000	1 e
Oxetane, 3,3-Bis(Chloromethyl)-	78-71-7	500	1 e
Oxydisulfoton	2497-07-6	500	1 e,h
Ozone	10028-15-6	100	1 e
Paraquat	1910-42-5	10/10,000	1 e
Paraguat Methosulfate	2074-50-2	10/10,000	1 e
Parathion	56-38-2	100	10 c,d
Parathion-Methyl	298-00-0	100/10,000	100 c
Paris Green	12002-03-8	500/10,000	1 d
Pentaborane	19624-22-7	500	1 e
	2570-26-5	100/10,000	1 e
Pentadecylamine			
Peracetoc Acid	79-21-0	500	1 e
Perchloromethylmercaptan	594-42-3	500	100
Phenol	108-95-2	500/10,000	1,000
Phenol, 2,2'-Thiobis(4-Chloro-6-Methy	1.		
Phenol, 2, 2'-Thiobis (4-Chloro-6-Methy		100/10,000	1 e
Phenol, 3-(-Methylethyl)-,	64-00-6	500/10,000	1 e
Methylcarbamate			
Phenoxarsine, 10,10'-Oxydi-	58-36-6	500/10,000	1 e
Phenyl Dichloroarsine	696-28-6	500	1 d,h
Phenylhydrazine Hydrochloride	59-88-1	1,000/10,000	1 e
Phenylmercury Acetate	62-38-4	500/10,000	100
Phenylsilatrane	2097-19-0	100/10,000	1 e,h
Phenylthiorea	103-85-5	100/10,000	100
Phorate	298-02-2	10	10
Phosacetim	4104-14-7	100/10,000	1 e
Phosfolan	947-02-4	100/10,000	1 e
Phosgene	75-44-5	10	10 [
Phosmet	732-11-6	10/10,000	1 e
		.5, 10,000	1 6

Phosphamidon	13171-21-6	100	1	e
Phosphine	7803-51-2	500	100	
Phosphonothioic Acid, Methyl-,	2703-13-1	500	1	е
O-Ethyl O-(4-(Methylthio)Phenyl)Este			•	•
	50782-69-9	100	1	e
Phosphonothioic Acid, Methyl-,	20102-09-9	100	,	e
S-(2-(Bis(1-Methylethyl)Amino)Ethyl)				
O-Ethyl Ester				
Phosphonothioic Acid, Methyl-,	2665-30-7	500	1	е
O-(4-Nitrophenyl)O-Phenyl Ester				
Phosphoric Acid, Dimethyl 4-	3254-63-5	500	1	е
(methylthio)phenyl ester			•	_
	2587-90-8	500	1	c,e
Phosphorothioic Acid, 0,0-Dimethyl-S-	2307-90-0	300	•	
(2-Methylthio) Ethyl Ester		400		. 9
Phosphorus	7723-14-0	100		b,h
Phosphorus Oxychloride	10025-87-3	500	1,000	ď
Phosphorus Pentachloride	10026-13-8	500	1	b, e
Phosphorus Pentoxide	1314-56-3	10	1	b,e
Phosphorus Trichloride	7719-12-2	1,000	1,000	•
· · · · · · · · · · · · · · · · · · ·	57-47-6	100/10,000	1,000	е
Physostigmine			i	
Physostigmine, Salicylate (1:1)	57-64-7	100/10,000		е
Picrotoxin	124-87-8	500/10,000	1	e
Piperdine	110-89-4	1,000	1	e
Pirimifos-Ethyl	23505-41-1	1,000	1	e
Potassium Arsenite	10124-50-2	500/10,000	1	d
Potassium Cyanide	151-50-8	100	10	ь
Potassium Silver Cyanide	506-61-6	500	1	Ď
	2631-37-0	500/10,000	i	e,h
Promecarb				
Propargyl Bromide	106-96-7	10	1	е
Propiolactone, Beta	57-57-8	500	1	e
Propionitrile	107-12-0	500	10	
Propionitrile, 3-Chloro-	542-76-7	1,000	1,000	
Propiophenone, 4-Amino-	70-69-9	100/10,000	· 1	e,g
	109-61-5	500	1	
Propyl Chloroformate		7.7.7	100	-
Propylene Oxide	75-56-9	10,000		
Propyleneimine	75-55-8	10,000	1	
Prothoate	2275-18-5	100/10.000	1	e
Pyrene	129-00-0	1,000/10,000	5,000	C
Pyridine, 2-Methyl-5-Vinyl-	140-76-1	500	1	е
Pyridine, 4-Amino-	504-24-5	500/1,000	1,000	h
Pyridine, 4-Nitro-, 1-Oxide	1124-33-0	500/10,000	1,000	
Pyriminil	53558-25-1	100/10,000		e,h
Quabain	630-60-4	100/10,000	1	•
Salcomine	14167-18-1	500/10,000	1	е
Sarin	107-44-8	10	1	e,h
Selenium Oxychloride	7791-23-3	500	1	е
Selenious Acid	7783-00-8	1,000/10,000	10	_
Semicarbazide Hydrochloride	563-41-7	1,000/10,000	1	
Silane, (4-Aminobutyl)Diethoxymethyl-	3037-72-7	1,000	1	
Sodium Arsenate	7631-89-2	1,000/10,000	100	
Sodium Arsenite	7784-46-5	500/10,000	1	
Sodium Azide (Na(N3)	26628-22-8	500	1,000	) b
Sodium Cacodytate	124-65-2	100/10,000	1	e
Sodium Cyanide (Na(CN)	143-33-9	100	10	) Ь
Sodium Fluoroacetate	62-74-8	10/10,000	10	-
Sodium Selenate	13410-01-0	100/10,000		
			100	_
Sodium Selenite	10102-18-8	100/10,000		
Sodium Tellurite	10102-20-2	500/10,000		
Stannane, Acetoxytriphenyl-	900-95-8	500/10,000		e,g
Strychnine	57-24-9	100/10,000	10	) с
Strychnine Sulfate	60-41-3	100/10,000	10	) е
Sulfotop	3689-24-5	500	100	)
Solfoxide, 3-Chloropropyl Octyl	3569-57-1	500		e
Sulfur Dioxide	7446-09-5	500		e,l
	man and a second a	100		
Sulfur Tetrafluoride	7783-60-0			
Sulfur Trioxide	7446-11-9	100		b,e
Sulfuric Acid	7664-93-9	1,000	1,000	
Tabun	77-81-6	10		l c,e
				'n
Tellurium	13494-80-9	500/10,000		l e
Tellurium Hexafluoride	7783-80-4	100		l e,k
		100	10	
Tepp	107-49-3			
Terbufos	13071-79-9	100		l e,h
Tetraethylead	78-00-2	100		c,d
Tetraethylin	597-64-8	100	•	1 c,e
Tetramethyl lead	75-74-1	100		1 c,e
				-

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Tetranitromethane	509-14-8	500	10
Thallium Sulfate	10031-59-1	100/10,000	100 h
Thallous Carbonate	6533-73-9	100/10,000	100 c,h
Thallous Chloride	7791-12-0	100/10,000	100 c,h
Thallous Malonate	2757-18-8	100/10,000	1 c,e
		•	ħ
Thallous Sulfate	7446-18-6	100/10,000	100
Thiocarbazide	2231-57-4	1,000/10,000	1 e
Thiofanox	39196-18-4	100/10,000	100
Thionazin	297-97-2	500	100
Thiophenol	108-98-5	500	100
Thiosemicarbazide	79-19-6	100/10,000	100
Thiourea, (2-Chlorophenyl)	5344-82-1	100/10,000	100
Thiourea, (2-Methylphenyl)	614-78-8	500/10,000	1 e
Titanium Tetrachloride	7550-45-0	100	1 e
Toluene 2,4-Diisocyanate	584-84-9	500	100
Toluene 2,6-Diisocyanate	91-08-7	100	100
Trans-1,4-Dichlorobutene	110-57-6	500	1 1
Triamiphos	1031-47-6	500/10,000	1 e
Triazofos	24017-47-8	500	1 e
Trichloro(Chloromethyl)Silane	1558-25-4	100	1 e
Trichloro(Dichlorophenyl)Silane	27137-85-5	500	1 e
Trichloroacetyl Chloride	76-02-8	500	1 e
Trichloroethylsilane	115-21-9	500	1 e,h
Trichloronate	327-98-0	500	1 e,k
Trichlorophenylsilane	98-13-5	500	1 e,h
Triethoxysilane	998-30-1	500	1 e
Trimethyichlorosilane	75-77-4	1,000	1 e
Trimethylolpropane Phosphite	824-11-3	100/10,000	1 e,h
Trimethyltin Chloride	1066-45-1	500/10,000	1 e
Triphenyltin Chloride	639-58-7	500/10,000	1 e
Tris(2-Chloroethyl)Amine	555-77-1	100	1 e,h
Valinomycin	2001-95-8	1,000/10,000	1 c,e
Vanadium Pentoxide	1314-62-1	100/10,000	1,000
Vinyl Acetate Monomer	108-05-4	1,000	5,000 d,l
Warfarin	81-81-2	500/10,000	100
Warfarin Sodium	129-06-6	100/10,000	10 e,h
Xylylene Dichloride	28347-13-9	100/10,000	1 e
Zinc Posphide	1314-84-7	500	100 ь
Zinc, Dichloro(4,4-Dimethyl-	58270-08-9	100/10,000	1 e
5((((Methylamino)Carbonyl)Oxy)lmino)-			
Pentanenitrile)			

### NOTES:

- a. This chemical does not meet acute toxicity criteria. Its TPQ is set at 10,000 pounds.
- b. This material is a reactive solid. The TPQ does not default to 10,000 pounds for non-power, non-molten, non-solution form.
- c. The calculated TPQ changed after technical review as described in the technical support document.
  d. Indicates that the RQ is subject to change when the
- d. Indicates that the RQ is subject to change when the assessment of potential carcinogenicity and/or other toxicity is completed.
- e. Statutory reportable quantity for purposes of emergency notification under SARA section 304(a)(2).
  - f. (Reserved).
- g. New chemicals added that were not part of the original list of 402 substances.
- h. Revised TPQ based on new or re-evaluated toxicity data.
- j. TPQ is revised to its calculated value and does not change due to technical review as in proposed rule.

<sup>\*</sup> Only the statutory or final RQ is shown. For more information, see 40 CFR Table 302.4.

k. The TPQ is revised after proposal due to calculation error.

 Chemicals on the original list that do not meet toxicity criteria but because of their high production volume and recognized toxicity are considered chemicals of concern ("Other chemicals").

[52 FR 13395, April 22, 1987, as amended at 52 FR 15321 & 15412, April 28, 1987; 52 FR 48072 & 48073, Dec. 17, 1987; 53 FR 5575, Feb. 25, 1988; 54 FR 43165, October 20, 1989; 54 FR 53057, Dec. 27, 1989; 55 FR 5544, Feb. 15, 1990; 58 FR 35314, June 30, 1993]

Date :06/30/1993

### References

- 40 CFR 302.4 Table 302.4, "List of Hazardous Substances and Reportable Quantities"
- 40 CFR 302.4 Appendix B, "Radionuclides"
- 40 CFR 302.6, "Episode Release Reporting Requirements Under CERCLA"
- 40 CFR 302.8, "Continuous Release Reporting Requirements"
- 40 CFR 300.405, "National Contingency Plan"
- 40 CFR 355, "Emergency Release Notification"
- 40 CFR 355 Appendix A, "The List of Extremely Hazardous Substances and their Threshold Planning Quantities"
- "Comprehensive Environmental Response, Compensation, and Liability Act" (CERCLA) as Amended by the "Superfund Amendments and Reauthorization Act" (SARA)
- "Emergency Planning and Community Right-to-Know Act" (EPCRA)
- S-3 (DP-9) Memorandum, July 19, 1990; "Emergency Management and Off-Site Notification."
- DOE Order 5000.3B, "Occurrence Reporting and Processing of Operations Information," January 19, 1993
- DOE Order 5500.1B, "Emergency Management System," May 30, 1991
- DOE Order 5500.2B, "Emergency Categories, Classes, and Notification and Reporting Requirements," April 30, 1991
- DOE Order 5500.3A, "Planning and Preparedness for Operational Emergencies," April 30, 1991
- DOE Order 5500.10, "Emergency Readiness Assurance Program," April 30, 1991
- USEPA Publication 560/4-91-011, "Title III List of Lists"

### Acronym List

AC Authorized Classifier

AEA Atomic Energy Act of 1954

CERCLA Comprehensive Environmental Response, Compensation, and Liability Act

CWA Clean Water Act

**DEO** Director of Emergency Operations

**DP-9** Office of Self-Assessment

EH-1 Assistant Secretary for Environment, Safety, and Health

EH-60 Office of Nuclear Safety Policy and Standards

**EHS** Extremely Hazardous Substance

EMS Emergency Management System

**EOC** DOE Headquarters Emergency Operations Center

**EPCRA** Emergency Planning and Community Right-to-Know Act

**ERAP** Emergency Readiness Assurance Programs

**ERPG** Emergency Response Planning Guide

FWPCA Federal Water Pollution Control Act

HS Hazardous Substance

LEPC Local Emergency Planning Committee

M&O Management and Operations

NIM Nuclear Incident Monitor

NRC Nuclear Regulatory Commission

NS-1 Office of Nuclear Safety

**ORPS** Occurrence Reporting and Processing System

PAG Protective Action Guide

**PSO** Program Secretarial Officers

**RQ** Reportable Quantity

SARA Superfund Amendments and Reauthorization Act

SERC State Emergency Response Commission

SNM Special Nuclear Material

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