

PRESENTED BY

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GRANTA MI Usage Overview



- ~975 licenses enterprise-wide
- Multiple uses
- First exemplar: At-Risk Materials
 - >4,500 in-house materials
 - Restricted substance information
 - Physical/mechanical/thermal properties for design community
 - Manufacturer information for some materials
 - Fallback links to Materials Universe
 - Table for case management of at-risk materials
 - Reporting tool written in python
- Other use cases/databases on the horizon [requires sites to make consistent schema]
 - Test data
 - Calibrated Materials Models
 - Additive Manufacturing
 - Data for materials compatibility and surveillance studies
- Integration
 - CREO [via Gateway]
 - PDMLink [third party development]
 - Sandia Analysis Workbench [via SOAP API in Java....we still really want a more modern API]
 - MatCal [to calibrate materials models to test data, via python STK]

Further Progress on At-Risk Materials: Cases Table

- Schema Shared by Rick at last EMIT
- Risk factor information → legislative, supplier, and/or technical basis of risk
- Risk management info
- Watchlist generation for communication

Contents

NSE Specifications and SNL Data

NSE Weapons Materials Specifications

- Products and parts
- Coatings
- Critical Materials
- Legislations and Lists
- Materials - in house
- MaterialUniverse
- ProcessUniverse
- Producers
- Reference
- Resources
- Restricted Substances
- Shape
- Specifications
- Suppliers
- Transport
- Use - mobile mode
- Use - static mode
- At-Risk - Cases
- At-Risk - Suppliers
- At-Risk - Suppliers Dun-Bradstreet
- MACa - Test Equipment

Layout: At-Risk - Cases Edit View Tools

Non-Sensitive Example for EMIT

Case

Status Mitigation Attempts Underway

Materials [Hide table](#) [Save as CSV](#) [Copy To Clipboard](#)

Material	Linking value (Material ID)	Linked records found
Thixotropic Epoxy Adhesive Cover Sheet: 2181086 [v1]	2181086	Thixotropic Epoxy Adhesive Cover Sheet: 2181086 [v1]

[Save as CSV](#) [Copy To Clipboard](#)

Method of discovery Reactive

Primary risk category Attainability (Supplier, Obsolescence, Qualification)

Site-specific rankings [Hide table](#) [Save as CSV](#) [Copy To Clipboard](#)

Site	Risk Level
SNL/CA	1 - Low

[Save as CSV](#) [Copy To Clipboard](#)

Impacted components Other

Date added Thursday, September 13, 2018

Forecast

Inventory [View Table](#)

Estimated good-through date Tuesday, September 01, 2020

Further Progress on At-Risk Materials: Monitoring/Escalation

- Designing Candidate, At-Risk, and Issue lists

ISSUE

- Unavailability is occurring or will occur → realized risk
- Prioritize using Issue Priority Number

At-Risk

- Material is at risk
- Prioritize using Risk Priority Number
- If criteria exceeds Risk Priority Number threshold, escalate

Candidate

- Material is potentially at risk and is placed on a Watchlist
- Prioritize using Urgency
- If criteria exceeds Urgency threshold, escalate

In-house Materials

- All in-house materials specifications tracked in GRANTA
- If @RM risk factor exceeds threshold (legislative, supplier, technical), escalate

Further Progress on At-Risk Materials: Enhancing usability via Human Factors

Status

Material Status Level

Material
Candidate
Risk
Issue

Urgency is > 50 and risk priority number is > 400

The specific material's status level is color coded- representing the highest risk level

Material Status Information

Urgency Properties

100

Risk Properties

700

Issue Properties

N/A

Handling Strategy

Monitor

Method

Reactive/Automated

“Granta Gripes”

Two most important to
EMIT/Product Risk

Presented at MDMC
DOE site votes and prioritization

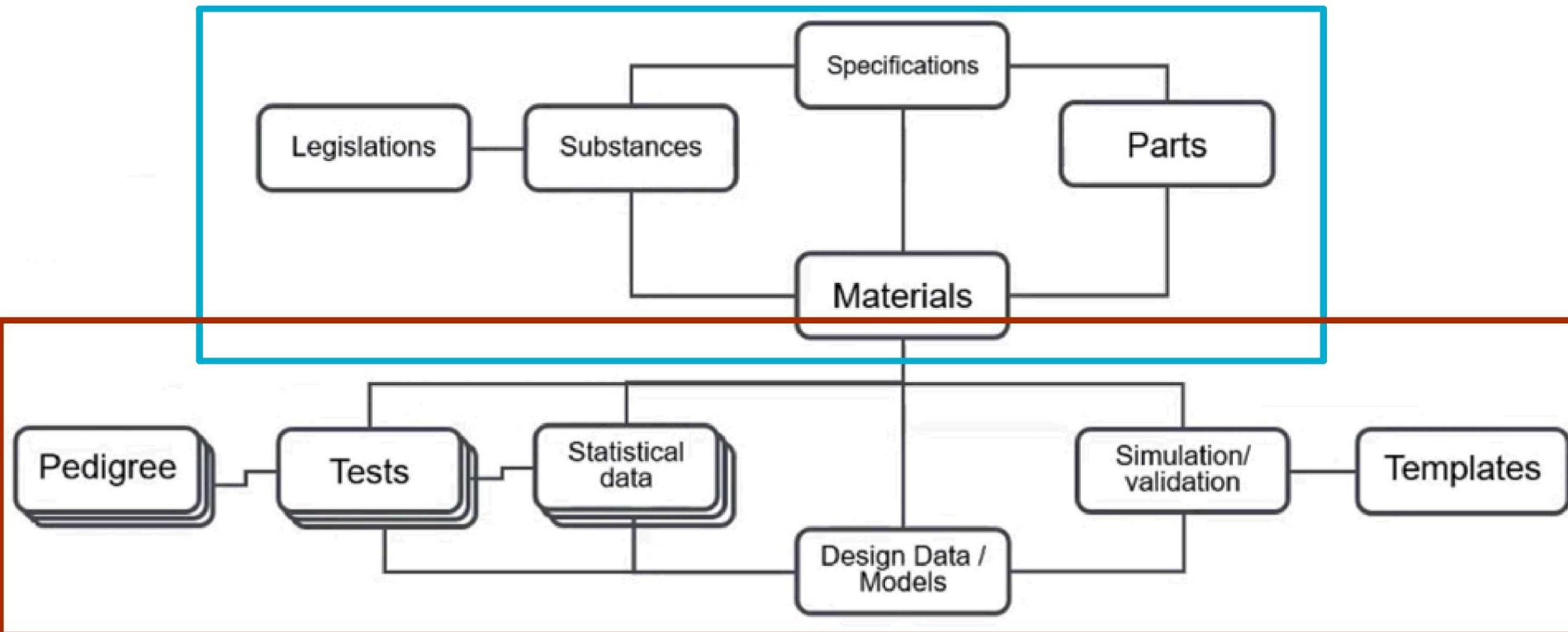
Summary	Total Votes
Functional data in tabular data	51
Smart/tabular links need to work cross-database	39
Documentation is fragmented...or <u>non-existent</u> . Seems to push to expensive training	21
Export all records in a list to excel in viewer	21
Offline syncing options suck	20
Linux support for <u>CAE</u> gateway	20
BUG: Trailing zeros aren't exported	17
<u>Non-intuitive</u> and missing buttons in Viewer (e.g. X-Y Chart, Comparison Chart, can't export)	17
Export should include links	15
Can't link tabular column to linked data	15
Need to learn <u>xml</u> and <u>RegEx</u> makes text importers difficult	15
Need better ways to make training <u>customizable</u> to our sites	12
Control over legend in graphs to include attribute data not included in parameters.	12
E-collaboration	11
Export tabular data to <u>csv</u> /excel	11
New role with release, but not edit privileges	11
Kerberos <u>AUTH</u> for python on non-windows	10
Platform (windows-) dependent tools, particularly toolbox	10
Version number of record used as source of tabular data is not exported (needed to ensure)	9
More metrics on record access/export/etc.	9
Custom Importers Available in the excel auto creation tool location on MI: Viewer	9
Guidance on updating links to reference data	8
Persistent plot of individual curves	7
Python Toolkit should support non-root install on Linux	7
Allow toolbox users to add notes to version history	6
Need multi-valued discrete in tabular data	6
Python Toolkit needs native Mac support	5
<u>MatAnalyzer</u> : Needs to hop multiple links	2
Explore: allow write users to edit version-controlled-tables	2
We need to be able to delete version controlled records	2

I. Smart and tabular links need to work cross-database

- Restricted Substance Database/Product Risk Database demonstrated that tabular data is useful:
 - Can embed information from one table (e.g. restricted substances) into, another (e.g. a material record that we care about)
 - First-degree hops using tabular links work well via many Granta functions:
 - Data entry (via web interface and Excel importers)
 - Data updater (including workflows where data may be changed on databases that are on separate networks)
 - The DOE may be a somewhat unique customer in needing to maintain separated instances of databases in this way, but it may also enable easier sharing of some information within EMIT (SNL has shared some legislation and corresponding restricted substance information in the past, for example)
 - Searches [what materials are impacted by this legislation?]
 - Excel exports
 - Python Scripting Toolkit
 - CAE exporters
 - Gateways

I. Smart and tabular links need to work cross-database



- Without cross-database links, our options for implementing as we need are limited



2. Export all records in a list to Excel from within MI:Viewer [the web interface]

- Can export a single record—not a list
- Currently, MI:Toolbox has this functionality, but common use cases are to:
 - Export all @RM cases that apply to a site or system for reviews/updates
 - Export spec/material records for everything in a component's materials list

Reports

Add records by clicking on the  'Add to list' tool on the  menus throughout GRANTA MI:Viewer.







































You have 658 record(s) in your list.

Sort

NSE Weapons Materials Specifications

Materials - in house

(300 records shown)

	QQ-A-355 [v1]	
	QQ-A-362 [v1]	
	QQ-A-362 (Core 2024) [v1]	
	QQ-A-362 (Cladding 1230) [v1]	
	QQ-B-611 [v1]	
	QQ-B-611 (Composition A) [v1]	
	MIL-DTL-45204 [v1]	
	MIL-DTL-45204 (Type 1) [v1]	
	MIL-DTL-45204 (Type 2) [v1]	
	MIL-DTL-45204 (Type 3) [v1]	
	AMS5620 [v1]	
	AMS5620 (Type 2, 420F) [v1]	
	AMS5620 (Type 1, 420FSe) [v1]	
	AMS5833 [v1]	
	AMS5629 [v1]	
	AMS5643 [v1]	
	AMS4082 [v1]	
	B308 [v1]	
	AMS3652 [v1]	

[Clear List](#) [Copy To Clipboard](#) [Paste From Clipboard](#)

Perform an operation on the records in your list.



Comparison Table



Comparison Chart



X-Y Chart



Export



Bulk Edit: Version Control



Download Excel

Run Reports [View / Download Reports...](#)

The following reports can be run on the records currently in the Record List:



Legislation Impacts On Substances [PDF](#)



Legislation Impacts On Materials [PDF](#)

New Wish #1: Easy CSS formatting based on attribute values

- We rate different risk factors on a 1 (low)-5 (high) scale
 - We currently “color code” these in a report generated using Python
 - We would like to apply this sort of color coding when MI:Viewer displays these attribute values.

Site Specific Rankings

Site	Legislative Risk	Supplier Risk	Technical Risk
SNL	4	5	1

New Wish #2: Set Subset of Regulations for Searches

- We use a subset of the regulations offered in GRANTA
- Easier inclusion/exclusion of Restricted Lists searches is desired
 - For example, when doing a restricted substance search, can I more easily apply selected legislative filters instead of scrolling through +130 items?
 - Have ability to retrieve common subset

Filter by specific attributes

[+ Add attributes to your search](#)

or start typing the name of an attribute below, e.g. "tensile strength":

Type first few letters of attribute name here...



▼ NSE Weapons Materials Specifications > Materials - in house

▼ Restricted substances information

Restricted substances associated with this material : Legislation name



The Measures for Environmental Administration Registration of Hazardous Chemicals (China MEP Order 22)
The Phaseout of Ozone-Depleting Substances
The SIN List 2.1 (Substitute it now)
Trivalent Chromium: OSHA 29 CFR 1910.1000
TSCA

is one of



Search

Clear All