Intel Material Supplier EHS Expectations Training

Supply Chain Ramp and Regulations
Disclaimer: The facts and scenarios presented are based on the currently available information. Global regulatory expectations are evolving, and as they do we will engage with the supply base to review any new requirements and/or expectations.

Acknowledgments: Intel Materials Risk Assessment Team - ATGM, PE EHS, TD EHS, Corporate EHS
Company Vision

“If it is smart and connected, it is best with Intel.”

Company Mission

“Utilize the power of Moore’s Law to bring smart, connected devices to every person on Earth.”
Objectives

At the end of this class you should:

- Understand why Intel is requesting information on suppliers related to EHS
- Know how to meet Intel’s expectations
  - Information disclosure: What/when/how
  - Change management
Key Topics

- Background and Motivation
- Types of Materials in Scope
- Information required
  - As a function of stage in the development cycle of at Intel
  - Based on type of material
  - Method for disclosing and protecting supplier IP
- Examples
- Resources
Background and Motivation
Predictable Silicon Track Record

Executing to Moore’s Law

Enabling new devices with higher functionality & complexity while controlling power, cost, and size
New Chemistry Challenges

From SEMATECH (Semiconductor Manufacturing Technology)
EHS Global Regulations – Increasing

- CA Green Chemistry
- US EPSIA
- US TSCA, PFOS
- “Conflict Minerals”
- EU RoHS, EU REACH, EU CLP
- India RoHS
- Turkey, Ukraine RoHS
- Korea RoHS
- Korea New Chems
- Japan Chemicals
- China RoHS
- China New Chems
- Taiwan New Chems
- Vietnam GHS RoHS*
- Malaysia New Chems
- Costa Rica GHS
- China SAWS
- “Conflict Minerals”
- Un GHS
- UN Convention on Persistent Organic Pollutants
- UN Strategic Approach to Chemicals Management
- UN/OECD Due Diligence Guidance for “conflict minerals”

March 2015
New Materials continually added to Candidate Lists = “Black List” for some (EU)

Number

>2000 Substances

March 2015
How do we use the information provided?

To assess and mitigate risks to our:

- **Supply chain**
  - Ensure we can procure needed materials
  - Ensure we can legally receive/use the material in each manufacturing site

- **Manufacturing processes**
  - Ensure we have the controls in place in our factories to protect our people and the environment

- **Final Products**
  - Ensure our products meet the regulatory requirements of each country we ship/sell to

- **Note** – We also help to enable Innovation by influencing legislation to “make sense” while maintaining protection of human health & the environment
Type of Materials in Scope
Regulations Can Apply More Broadly than to the “CHEMICAL” Itself

All substances on their own ......

Substances in mixtures .............

Substances in Articles ....................

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Chemicals: Single Substance or Mixture

- **Types**
  - Liquid chemicals (i.e. sulfuric acid, photoresists)
  - Gases (i.e. silane, diborane)
  - Solders, Pastes, Underfill
  - Precursors
  - Metal targets & Anodes

- What needs to be done depends on the hazard of the substance

- **Definition**: Hazardous is any chemical that is classified as a health, physical, environmental hazard – any other “equivalent” level of concern
Articles

- Types - Boards, Substrates, CPUs, cables

- What needs to be done depends on the “hazard” listing of the substances within, how much, if released, etc..

- **Definition:** An "article" means a manufactured item: (1) which is formed to a specific shape or design during manufacture (2) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (3) which does not release, or otherwise result in exposure to, a **hazardous chemical** under normal conditions of use.
Determining Regulatory Requirements, Information Disclosure and Timing
Goal: Ensure regulatory requirements are met at each stage of the material lifecycle

- **Raw Material Procurement**
  - Country specific process and regulations
  - Country specific registrations

- **Supplier Manufacturing**
  - Country specific process and regulations
  - Country specific registrations

- **Transport to Intel**
  - Import/Export
  - GHS – labelling & SDS
  - US TSCA/ EU REACH/China NEW/SAWS registration

- **Intel Manufacturing**
  - Safe Use
  - Abatement/Waste Disposal
  - SDS & SEIMS (full material disclosure)

- **Final Intel Product**
  - Chemicals in Articles
  - MDDS, IPC, SEIMS

Proof of supplier compliance

Supplier information required

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Balance the information requests with potential impact

**External Exploration**
- No regulations
- Limited insight on potential use at Intel

**Pathfinding**
- Initial EHS approval for R&D
- First visibility to understand regulatory potential

**Development**
- Becomes part of the standard process flow
- HVM location and usage available for full regulatory approval

**Technology Selection/High Volume Manufacturing**
- Material approved at a point in time
- Subject to future regulations

**Product**
- Regulations in Product come into play
- Subject to future regulations

2 – 10 years

Can be >10 yrs

March 2015
# Material Types & Information Required

<table>
<thead>
<tr>
<th>Material Type</th>
<th>(M)SDS</th>
<th>IP DATA (SEIMS)</th>
<th>Complaint Container label</th>
<th>Regulatory Declaration</th>
<th>IPC 1752 (MDDS) or IEC 62474</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemicals (not in final product)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Acetone, Wafer coat, Fluorinert</td>
</tr>
<tr>
<td>Chemicals in final product</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Underfill, paste, solders, Thermal interface material</td>
</tr>
<tr>
<td>Articles (in final product)</td>
<td>X (sub-components)</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>Substrates, capacitors, heat spreaders</td>
</tr>
</tbody>
</table>
## Intel’s Material Selection Phases and EHS Needs

<table>
<thead>
<tr>
<th>Material Selection Phase</th>
<th>What EHS information is needed</th>
<th>Why</th>
</tr>
</thead>
<tbody>
<tr>
<td>External Exploration</td>
<td>None – Understand what would be required</td>
<td>No surprises if selected</td>
</tr>
<tr>
<td>Pathfinding &amp; Development</td>
<td>Safety Data Sheet for R&amp;D chemical IP data for parts in final product OR Negative declaration to Intel's Product Ecology Watch list or IP data</td>
<td>Basic understanding of materials</td>
</tr>
<tr>
<td>Technology Development</td>
<td>Safety Data Sheet (SDS) for chemicals if different than R&amp;D</td>
<td>Basic understanding of materials</td>
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<tr>
<td>(leading candidates)</td>
<td>Early Timeline for SEIMS (IP data) request</td>
<td>Full understanding of materials</td>
</tr>
<tr>
<td>(leading candidates)</td>
<td>Declaration that all chemicals will meet country regulatory requirements (TSCA, MEP, MOH, SAWS...)</td>
<td>Required to legally import/use</td>
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<tr>
<td>(materials selection)</td>
<td>Material Declaration Data Sheet (MDDS), IPC or IEC for articles</td>
<td>Full understanding of final product</td>
</tr>
<tr>
<td></td>
<td>Updated MDDS, IPC or IEC if needed</td>
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</tr>
</tbody>
</table>
## Intel’s Material Selection Phases and EHS Needs

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<tr>
<th>Material Selection Phase</th>
<th>What EHS info is needed</th>
<th>Why</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology Selection</td>
<td>Updated SDS with exact/new chemical name Container label that matches SDS</td>
<td>Required by law; ensures basic HAZCOM</td>
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<tr>
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<td>Additional Test Data upon request</td>
<td>Meet Customer requirements</td>
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<td></td>
<td>IP data into SEIMS – REQUIRED</td>
<td>Understand full material risk</td>
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<tr>
<td></td>
<td>Conflict minerals requirements</td>
<td>Intel can be conflict free</td>
</tr>
<tr>
<td>Material Selection /HVM</td>
<td>SDS’s and labels to match for each material in all languages where used</td>
<td>Required by each country to have SDS/Label in native language – basic HAZCOM</td>
</tr>
<tr>
<td></td>
<td>IP data into SEIMS if not done so</td>
<td>Understand full material risk</td>
</tr>
<tr>
<td></td>
<td>Final declaration that Country specific registrations, regulatory requirements complete</td>
<td>Ensure we can legally use material in each country</td>
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</tbody>
</table>

**Note** – Intel would like ALL SDS & Labels to be in the GHS format for Pathfinding, Development & HVM

**CM**

GHS
Change Management
What if a Material Changes?

- Material Changes must be managed using Intel’s white paper system
- Any change to a Container LABEL must be done through a Level 5 white paper (Fab materials), Assembly Materials: Class 3 or 4 white paper for ATGM
- Any updates to an existing SDS must be submitted to Mailbox - Intel_MSDS@intel.com
- Keep up to date with Changing Global Regulations that could impact your products
  - May have to notify Country Regulators of certain changes
Lessons Learned – Continuous Areas of Improvement
Common Supplier EHS Issues - SDS’s

- Missing Country specific address in section 1
- Ingredients in section 2 do not add up to 100 percent
- Product Identifier does not match container label
- SDS’s not provided in native language
- Over classified or misclassified
- SDS information “conflicts” with label
- SDS updates not sent to Intel Mailbox
Common Issues continued – Labels

- No HAZCOM label
- Not all “Containers” are labelled
- Label in English ONLY when need to be in Spanish, Chinese, Baha, Vietnamese
- Product Name on label does not match Product Identifier on SDS
- Label not in GHS required format
- Label missing basic required information
- Label different than label elements specified in Section 2 of SDS
Common Issues continued – Other

- SEIMS data is missing
- Inputted SEIMS data does not list specific percentages
- Supplier regulatory declarations do not specify TSCA exemptions
- Supplier regulatory declarations are incomplete
Summary
Summary – Supplier Requirements

- Correctly Classify your materials
- Provide “compliant” SDS’s to Intel in all required Languages (GHS preferred)
- Label ALL Chemical containers with “compliant” label in all languages (GHS preferred) that MATCH SDS
- Have a legal entity or an Only Representative in each country of Export
- Register/Notify chemicals in all countries of export as required
- Provide regulatory declarations to Intel for each country of import/export
- Provide full disclosure of materials (SEIMS)
- Provide MDDS, IPC, EPC information

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Summary

- Understand Intel EHS Requirements
- Understand and comply to ALL country regulations where products may need to go
- Go to https://supplier.intel.com/supplierhub/
- Become familiar with Intel’s EHS policies and procedures for the supply chain
- Be proactive- understand upcoming worldwide regulations that impact your materials
Thank You & Questions
GHS – Labels & SDS
What is GHS?

GHS = Global Harmonized System of Classification and Labelling of Chemicals

- The NEW HAZARD COMMUNICATION
- Worldwide initiative to promote standard criteria for classifying chemicals
- System uses **pictograms**, **hazard statements**, and the **signal words** “Danger” and “Warning” to communicate hazards on
  - **Supplier product container labels**
  - **Supplier safety data sheets**
- Primary goal of GHS is better protection of human health and the environment

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**Country Specific GHS Status & Implementation – Phased in**

- Each Country has a regulatory agency and regulation that “implements” the “GHS” requirements
  
  - Example - US – Occupational Safety & Health Administration (OSHA) through 29 CFR 1910.1200 - HAZCOM Standard

<table>
<thead>
<tr>
<th>Site</th>
<th>Implementation</th>
<th>Links</th>
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<tbody>
<tr>
<td>China</td>
<td>Completed May’11 <strong>New</strong>*: China published new std adopting UN GHS Rev 4; implementation date is Nov 2014</td>
<td>Draft. Last signature. No mention of change to the draft copy. Did not receive clear understanding of the enquiry to MOH (classification and small packaging enquiry). 2(^{nd}) follow up will be done.</td>
</tr>
<tr>
<td>CR</td>
<td>6mths transition after standard is released. Likely April’13 (waiting for standard to be released- it’s past due)</td>
<td></td>
</tr>
<tr>
<td>EU</td>
<td>Adopted – Pure substances must be in compliance; Deadline for mixtures is May 31, 2015</td>
<td>Adopted GHS as part of the CLP &amp; REACH regulation.</td>
</tr>
<tr>
<td>IS</td>
<td>Follows EU or US</td>
<td></td>
</tr>
</tbody>
</table>
Chemical Suppliers regulatory obligations

- Correctly Classify Hazardous materials using the Globally Harmonized System (GHS)
- Provide GHS safety data sheets (SDS)
  - In EVERY LANGUAGE OF COUNTRY SHIPPED TO
- Label all chemical containers per GHS and country specific guidelines
  - IN EVERY LANGUAGE OF COUNTRY SHIPPED TO
- Ensure label on container matches the Product Identifier in Section 1 of the SDS
- Ensure Country specific registration requirements are met
Chemical Classifications

Chemicals must be classified using a harmonized system (GHS) that provides standardized language for:

- Health Hazard Categories
- Physical Hazard Categories
- Environmental Hazard Categories*
Safety Data Sheets

- Under the new GHS Haz Com Standards, Material Safety Data Sheets (MSDS) are now called Safety Data Sheets (SDS).
- All SDSs must have a consistent 16-section format.
- Suppliers must ensure that SDSs are compliant and in each native language
- Updates to SDS’s as needed – Send updates to Intel_MSDS@intel.com
Safety Data Sheets (SDSs)
New 16-section standardized SDS format required

**Section 1** – Identification
- Country Specific Address
- Phone Numbers

**Section 2** – Hazard(s) identification

**Section 3** – Composition / Information Ingredients

**Section 4** – First-aid Measures

**Section 5** – Fire-fighting Measures

**Section 6** – Accidental Release Measures

**Section 7** – Handling and Storage

**Section 8** – Exposure Controls/PPE

**Section 9** – Physical and Chemical Prop.

**Section 10** – Stability and Reactivity

**Section 11** – Toxicological Information

**Section 12** – Ecological Information*

**Section 13** – Disposal Consideration*

**Section 14** – Transport Information*

**Section 15** – Regulatory Information*

**Section 16** – Other information including date of preparation of last revision

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Container Label Elements

Note – A “Universal” label is BEST if feasible

- Symbols called “Pictograms”
- Signal Words
- Hazard Statements
- Precautionary Statements
- Product Identification
- Supplier/Manufacturer Identification
GHS HAZCOM Label Example

1. Sulfuric Acid

2. Danger! May be harmful if swallowed.
3. Causes severe skin burns and eye damage. Fatal if inhaled. Harmful to aquatic life.


5. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

6. In case of fire Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

See Material Safety Data Sheet for further details regarding safe use of this product.

Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA Telephone: +18003255832

1. Product Identifier
2. Pictograms
3. Signal word, “Danger!”
4. Hazard Statements
5. Precautionary Statements
6. Supplier Information
CHECK LABELS ON CHEMICAL CONTAINERS

But it's such a sweet smelling poison.

WARNING DO NOT EAT!
WEAPONS GRADE DEATH SYRUP
TOXIC!

EVERY CHEMICAL CONTAINER MUST HAVE A WARNING LABEL
What is a Container?

- Innermost package that contains the Chemical
- Examples - Syringe, bag, jug, jar, drum, tote, tube that contains the chemical
- If “small” then must have at a minimum
  - Product Identifier, pictogram, Manufacture name & phone number
  - Signal word, and A statement indicating full label is provided on outside package
SDS Section 1 must match Label Number 1

SDS Section 1

Section 1: Identification of the substance/mixture and of

1.1. Product identifier

- Trade name: Sulphuric Acid >=96%
- Substance name: sulphuric acid
- Index-No.: 016-020-00-6
- CAS-No.: 7664-93-9
- EC-No.: 231-639-5
- Registration number: 01-2119458838-20-xxxx

GHS Label

Note: Label Elements Specified in SDS must match container label
Chemical Approval
Chemical Approval - Two focus areas

Initial chemical procurement for R&D testing

- Initial chemical approval prior to purchase or shipment by review of SDS
- Initial understanding of potential regulations impacting chemical ingredients (ingredients not always fully disclosed)
- Approval contingent on R&D volumes, chemicals not entering into commerce
- May require full material disclosure (IP data)

Transfer /Select chemicals for HVM manufacturing

- Final review for use at Intel and receiving sites
- All proprietary ingredients entered into SEIMS
- Full Materials Risk Assessment Completed
- All SDS’s and container labels in native language
Full Material Disclosure (SEIMS)
Why full material disclosure?

Only way to perform a COMPLETE & COMPREHENSIVE risk assessment
What is meant by FULL material disclosure?

All Ingredients

- Ingredients required to be listed on the SDS
- Intellectual property claimed ingredients
- Intentionally added ingredients
- Any byproduct ingredient required for form, fit & function

Information required

- Ingredient name
- Chemical Abstract Number (CAS)
- Percentage of Ingredients must total 100 %
How is the data protected/stored?

- Intel’s **Supplier EHS IP Management System (SEIMS)** is a secure database
- SEIMS is a separate database, that is only accessible to certain EHS people
- SEIMS is accessible to Intel suppliers through Intel’s external Supplier Portal System (SPS) at [http://supplier.intel.com](http://supplier.intel.com)
Your Role as Suppliers

- Get SEIMS training and access SEIMS through Intel’s supplier portal [http://supplier.intel.com/](http://supplier.intel.com/)
  - *Training is available in many languages*

- Ensure that your IP disclosures are covered under an existing Non-Disclosure Agreement (NDA) – some suppliers have several NDAs with Intel

- Know your Intel Environmental Health and Safety contact to notify after you have uploaded IP information into SEIMS
Environmental Health and Safety

Supplier Videos & Job Aids
This section provides training that is applicable to ALL Suppliers and to Internal Admins and Users that will be using the Supplier EHS IP Management System (SEIMS) application. The information below is pertinent to how to request an account to use the SEIMS Application. This page was also designed to give you some basic information about SEIMS and to assist you with some rudimentary videos on how to accomplish various tasks as an EHS Supplier.

- **System Supplier Login Job Aid**
  (Adobe Acrobat .pdf, 367kB)

- **Request Account Link**
  (To begin the request for an account)

- **SEIMS Overview**
  (Macromedia Captivate .HTML, 1KB)

- **How to login to the SEIMS application?**
  (Macromedia Captivate .HTML, 1KB)

- **How do I update an NDA description?**
  (Macromedia Captivate .HTML, 1KB)

- **How do I add a product to an existing NDA?**
  (Macromedia Captivate .HTML, 1KB)

- **How do I activate or inactivate a product?**
  (Macromedia Captivate .HTML, 1KB)

- **How do I delete a product?**
  (Macromedia Captivate .HTML, 1KB)

- **How do I manage files and ingredients for a product?**
  (Macromedia Captivate .HTML, 1KB)

SEIMS Help Videos & Documents are available For the Suppliers

Return to slide 20
Intel Product Risk Assessments
Basic Product Compliance

- Intel products must comply to global hazardous substances regulations.
- Full disclosure of the regulated substances contained in any products, components, and parts being incorporated into Intel final product is required.
- This includes packaging provided to Intel or on behalf of Intel. For outsourced manufacturers, this includes packaging around products produced by the manufacturer on behalf of Intel.
Product Compliance Requirements

- Supplier Self-Assessment Form (Substance Watch List)
- Intel Environmental Product Content (EPC) specification 18-1201
  - Intel's specification that outlines the product content requirements related to EH&S, RoHS, REACH, etc.
  - Lists reportable, controlled and prohibited substances
- Scope - all suppliers and outsourced manufacturers
- Ensures Intel’s world wide product reporting requirements are met
- Referenced in supplier contracts, purchase orders and product Statements of Work (SOW)
- All material, packaging suppliers and outsourced manufacturers must read and agree to specification requirements

Product Compliance Declarations

- Suppliers must declare substances by downloading the Supplier Declaration Form (IPC/IEC) which includes disclosures for RoHS, JIG and REACH regulations, plus Intel’s low halogen initiative.

- Login to the Supplier Environmental Compliance (EC) Portal to view parts data, upload declaration forms, and complete the conformance statement to Intel’s Product Content spec.

Conflict Mineral Free Assessment

- Supplier has a publically available conflict minerals policy
- Supplier has completed the EICC/GeSI Conflict Minerals reporting template and provided a copy to Intel
- Supplier has identified all the Ta, Sn, W & Au smelter/refiner(s) in their supply-chain
- Supplier has performed due diligence in validating their supply chain is conflict free.
- Supplier has executed risk assessment in eliminating high risk smelters from their supply chain.
Lessons Learned – Continuous Areas of Improvement - PE
Common Issues IPC/IEC Form – Covered in GEMS

- Uploading to Intel Supplier Portal for the IPC-1752 or IEC 62474
- Weights not adding up to 100%
- Variable weight items normalized to 1 mg (pastes, fluxes, underfill, etc.)
- Forms not locked (IPC/IEC)
- Missing supplier signatures
- Completing EPC signature form
Common Issues: IPC/IEC Form

- Errors in IPC/IEC form content
- Incomplete reporting IPC/IEC
- Misreporting (oxides)
- Incomplete understanding of materials
- Incomplete analytical test capabilities or material understanding
- Missing 3rd party lab report mailed to the supper manager
## Issues within the supply chain

<table>
<thead>
<tr>
<th>Supply chain...</th>
<th>Issue...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of information about substances in formulations</td>
<td>Unable to check that formulation is being used legally</td>
</tr>
<tr>
<td>Lack of information about substances in dried coatings / adhesives etc.</td>
<td>Unable to meet legal obligations to provide information on SVHCs to customers</td>
</tr>
</tbody>
</table>
## Issues within the supply chain

<table>
<thead>
<tr>
<th>Supply chain...</th>
<th>Issue...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too specific or too general information on uses in the Chemical Safety Report</td>
<td>Checking that substances are being used legally will be a laborious exercise</td>
</tr>
<tr>
<td>Failure to register / Failure to check that the substance is being registered for their use</td>
<td>Substance could be lost due to supplier failure to engage in the REACH registration process for their use of a substance.</td>
</tr>
</tbody>
</table>
Supplier Regulatory Declarations
Supplier MUST Declare to Intel country specific substance regulatory information

General

- Suppliers must have a legal entity in each country to perform the registration/notification duties
- Complete for each country that Intel will use
- Types of information needed
  - Substance registration status, Registration numbers
  - Substance Notification status, Notification numbers
  - Substance listed on SNUR, Authorization and/or restrictions list
- Some EXAMPLES
  - U.S. TSCA listed or Exempted
  - China MEP new substance registration or notification
  - EU REACh Pre-registration, Registration, Authorization, Restriction
  - EU CLP notification
  - Malaysia Notification

March 2015
Example: Supplier Declaration

Dear Supplier:

Date: November 1, 2013

Intel, as a downstream user of chemicals, needs to ensure that each substance within every product meets the regulatory requirements of the country of use. Each supplier is expected to fulfill all of the regulatory requirements as required by each country specific law. In some instances, the supplier must have a legal entity and/or appoint an Authorized Representative to fulfill these duties in each country.

To the best of our understanding, the following duties must be fulfilled by the supplier/manufacturer, and/or legal entity if supplying to:

All Countries:
1. GHS formatted Safety Data Sheet in the native language of each country
2. Inherent and External (DOT) Chemical container Labels meeting local Hazard Communication Requirements and DOT requirements

United States:
1. TSCA High Volume Notice (HVN) or Low volume exceptions (LVE) of all substances
2. SNUR, is the substance subject to any EPA SNUR? If yes, explain

China:
1. Ministry of Environmental Protection (MEEP) nanomaterial registration
2. NIEP control-chemical licensing
3. Ministry of Commerce Control Chemical license
4. Customs approval of China GHS Chemical Label SDS

Costa Rica:
1. Registration with Costa Rica Ministry of Health

Vietnam:
1. To be supplied

Israel:
1. To be supplied

If shipping to other countries not listed above, other regulations will apply and a declaration is required.

Please note: Materials are potential candidates, and do not imply final material selection by Intel.

Company Name: __________________________ Completed by: __________________________ Date: __________________________

Representative: __________________________ Legal Entity Name: __________________________ Address: __________________________ Phone: __________________________ Email: __________________________

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*Please indicate, state IF: Add additional rows as needed and send separate document that meets the same intent for multiple ingredients/products.*

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Product Identifier</th>
<th>Label</th>
<th>TSCA HVN (if applicable)</th>
<th>LVE</th>
<th>NIEP</th>
<th>Ministry of Commerce Control Chemical</th>
<th>Customs Approval</th>
<th>CSHS (if applicable)</th>
<th>Note</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

Return completed form or direct questions to:

Davon Spencer, Operations						
Intel Materials EHS						
Office: (503) 613-4156						
Davon.Spencer@intel.com or Davon.Spencer.EHS@intel.com

Vicent Fan, Operations						
Intel Materials EHS						
Office: (503) 613-4156						
Vicent.Fan@intel.com or Victor.Fan@intel.com

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Europe - REACH

What
- Reach is European community regulation on chemical substances and their safe use
- It requires the Pre registration, Registration, Evaluation, Authorization and Restriction of chemical substances:
  - Pure
  - Within Mixtures
  - Within articles

Why
- Improve the protection of human health and the environment through better knowledge of the intrinsic properties of chemicals

Who
- Chemical Suppliers/manufacturers who make or import > 1 ton per year or any amount of an authorized chemical
- Intel's chemicals to Ireland

When
- Pre-registration – Now – all existing chemicals
- Full registration phases in 2010, 2013, 2108 based on tonnage and hazard
- Now - Declare products that contain candidate SVHC's

How
- Chemical Suppliers/manufacturers must gather information on properties and uses and register in a central database with ECHA
- ECHA will evaluate a percentage of submittals and may ask for more information
- ECHA will place SVHC's on the candidate list for eventual inclusion in Authorization
- Intel must collaborate with suppliers to ensure our uses and risk management measures are understood

March 2015
Europe - Classification, Labeling & Packaging (CLP)

What
• The EU regulation that align Europe's system to classify and label chemicals in accordance with the Global Harmonization system (GHS)

Why
• Update the classification, labels and MSDS's of existing chemicals to meet the GHS criteria

Who
• All Suppliers/Manufacturers/importers of Dangerous Chemicals – no Threshold

When
• Now – All substances must be notified
• Pure substances must be changed to GHS by 2010 (use up old stock till 2012)
• Mixtures must be changed by 2015 (use up old stock by 2015)

How
• Suppliers must send Notification on the classification to ECHA
• Update Chemical container label with new pictograms and phrases
• Update Safety data Sheets to meet GSH standards
• Intel has a white paper process to help manage the label change
Chemical Management in China

Measures for Environmental Management of New Chemical Substances (Order no 7) – China REACH
- Notification of new chemical substances
- Registration of import/export of toxic chemical
- China Ministry of Environment Protection (MEP) oversees import/manufacture licenses & notifications

Supplier Expectations
- Ensure substances supplied to Intel are on inventory
- Prepare and submit notifications as required or through Chinese entity
- Carry out post notification requirements
  - Prepare and implement compliance plan of registrations & notifications
- Provide certificates as required
- Constant and rapidly changing regulatory environment
U.S. Toxic Substance and Control Act (TSCA)

Primary law that oversees chemical products in commerce

TSCA addresses the production, importation, use, and disposal of specific chemicals

EPA has authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances

- Significant New Use Rules (SNURs) restrict chemicals – PFOS

Supplier expectations

- Ensure all substances supplied to Intel are on the TSCA inventory or exempted
- List information on MSDS
- Follow any restriction provisions
Other Intel EHS Initiatives
Supply Chain Sustainability Program

“Respect for people and our planet extends to our supply chain”

**Supplier Expectations**

We set clear legal compliance, ethics, and corporate responsibility expectations through our supply chain communications and training. We collaborate with our suppliers, as well as with the Electronic Industry Citizenship (EICC) and other industry associations on key initiatives we believe will have a lasting impact.

**Supplier Accountability**

We incorporate corporate responsibility requirements into our management systems, scorecards, and assessments, and work proactively with suppliers to source products and tools that help reduce our environmental impact.

**Recognizing Performance**

We provide regular feedback to suppliers on their achievements and progress. To reinforce our expectations, we integrate corporate responsibility considerations into our supplier awards and Supplier Continuous Quality Improvement Program.
Intel Supply Chain Sustainability Program Summary

Supplier expectations:

- Performance to Supplier Report Card Sustainability Criteria
  - Publicly post multi-year environmental program with objectives and goals tied to metrics
  - Complete annual Carbon, Water, Waste Data Collection
  - Complete an annual refresh of the RA2 supplier self assessment
  - Plan/schedule RA3 Audit if applicable

- Complete annual refresh of Supplier Ethical Expectations (SEE) training

- Ensure your contracts contain the latest ESG contract language; (i.e. Anti-Corruption and EICC contract clauses

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RESOURCES
Respect for people and our planet. This principle underlies our business practices and we expect the companies we do business with to apply the same principle. Intel is working to continuously improve transparency and promote corporate responsibility throughout the global electronics supply chain.

Partnering with suppliers that look toward the future

We are committed to environmental and social sustainability that does not end with the innovation inside our walls. It extends to our entire global supply chain—to the people and organizations we choose to do business with. We actively seek suppliers who continuously work to improve transparency, promote corporate responsibility, and support diversity.

HOT TOPICS

Anti-Corruption Laws and Intel Expectations
We expect you—our suppliers, agents, consultants—to conduct business with uncompromising integrity and operate within the same boundaries of business ethics to achieve our objectives. Our interactions with governments and state-owned enterprises, both as customers and as stakeholders have increased dramatically.

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