REACH and RoHS
System Supplier Training

Gems

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Background

- **Increasingly, the EU and other international markets are restricting the presence of hazardous materials in products and packaging.**
- **Goal is to eliminate these materials from the market.**
- **Impacts include:**
  - Required registration of chemical usage and volume
  - Communication to professional users and customers
  - Elimination of substances from product and/or packaging
  - If usage above specified tonnage, notification sent to regulatory authority

Brief overview of restricted substance requirements

REACH

***R**egistration, **E**valuation and **A**uthorization of **Ch**emicals* involves the following steps:

- ***Registration*:** All chemicals produced in or imported into the EU, in quantities over 1 tonne per year, will have to be registered

- ***Evaluation:*** Substances will be assessed by the European Chemicals Agency to identify those of highest risk

- ***Authorization:*** Substances of Very High Concern (SVHCs) will need companies to require permission or authorization for use, and substituted where possible

- ***Restriction:*** The REACH 'Safety Net'. May apply to a particular use or substance may be banned entirely

- ***Notification:*** SVHCs present in articles > 0.1% weight by weight of the article must be notified to customers/consumers. ECHA (The European Chemicals Agency) must also be notified if the substance is imported in > 1 tonne/year

EU REACH Overview

Directive EC/1907/2006 on chemicals and their safe use for the Registration, Evaluation and Authorization of Chemicals. The new law entered into force on 1 June 2007.

Goal:

- ***Reduce use of hazardous chemicals called 'Substances of Very High Concern' (SVHC) at manufacturing sites in the EU and in products and packaging sold in the EU.***

First SVHC Candidate List published Oct. 2008

SVHC lists are published 2x per year
(SVHC Lists 1-6 provided within references)

REACH Regulation Scope and Terms

REACH Regulation intended to:

•Require manufacturers and importers to gather comprehensive information on all substances and preparations imported or produced, used or sold in quantities >1 tonne/year/legal entity (about 30,000 substances today)

– **Substance** = single chemical (>80% pure)

– **Preparation** = intentional mixture of two or more substances (not a reaction product)

REACH Regulation Scope and Terms

REACH Regulation intended to:

- Require manufacturers and importers to gather comprehensive information on articles components that are ≥0.1% by weight of 'article weight'

  – **Article** = Manufactured object with special shape, surface, or design which determines its function to a greater extent than its chemical composition
  examples: packaging, disposables, whole products

RoHs Overview

Directive 2011/65/EU on the Restriction of the use of certain Hazardous Substances in electrical and electronic equipment (RoHS)

'From 1 July 2006, new electrical and electronic equipment put on the market ***does not contain****' (Art. 4(1)).....*

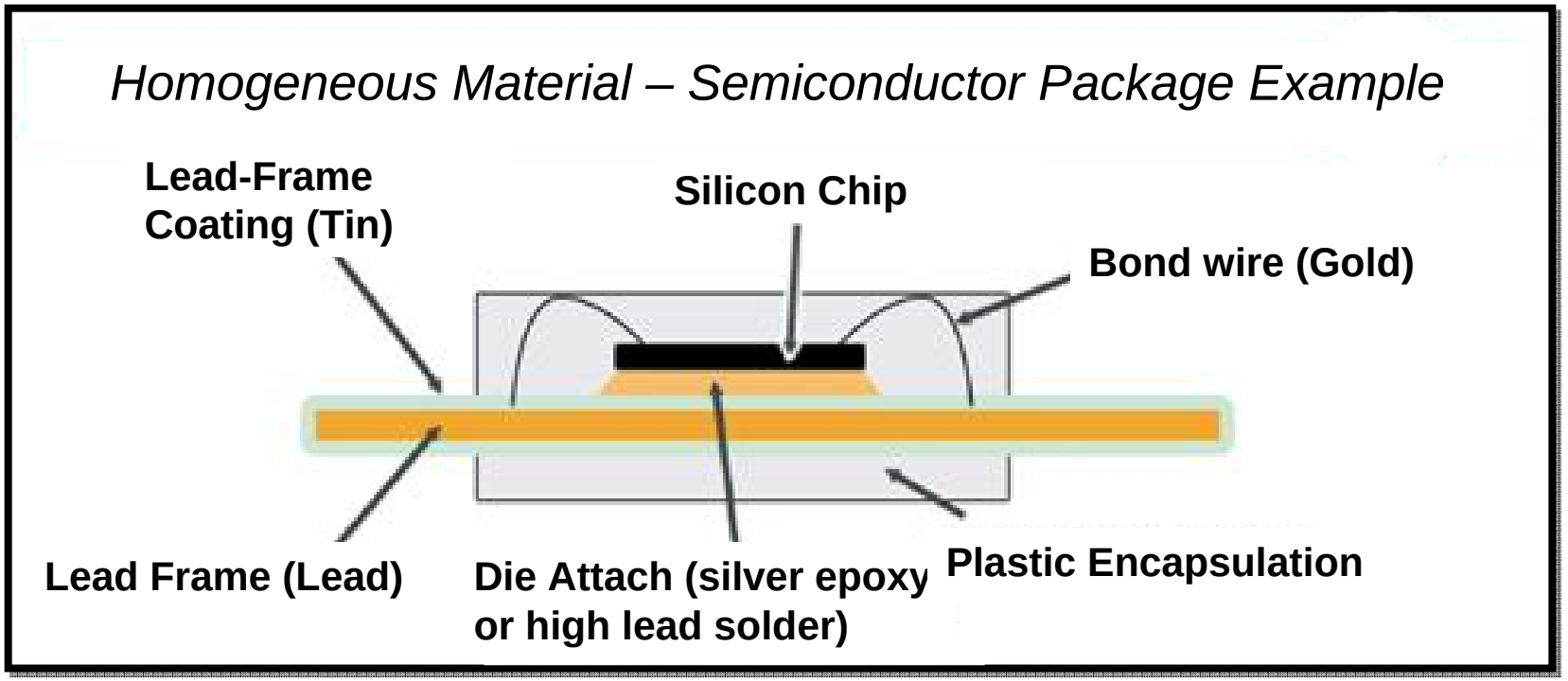
- Lead above 1000ppm
- Mercury above 1000ppm
- Cadmium above 100ppm
- Hexavalent Chromium above 1000ppm
- Polybrominated Biphenyls (PBB) above 1000pppm
- Polybrominated diphenyl ethers (PBDE) above 1000ppm

Applies to both consumer and professional products
Adopted or being considered in many countries/regions

"The threshold must be calculated at the Homogeneous Material Level"

Overview of RoHS

***Homogenous Material*: An element of a part which cannot be mechanically broken down further**



Each of these are examples of Homogenous Materials.
They cannot be broken down further.

Abbott's Action to Insure Compliance

What is GEMS?

*"GEMS, the **Global Environmental Management System** is a compliance engine used to achieve regulatory compliance by collecting, managing & reporting the presence of hazardous and controlled substances"*

Environmental Regulations Abbott is tracking using GEMS are:

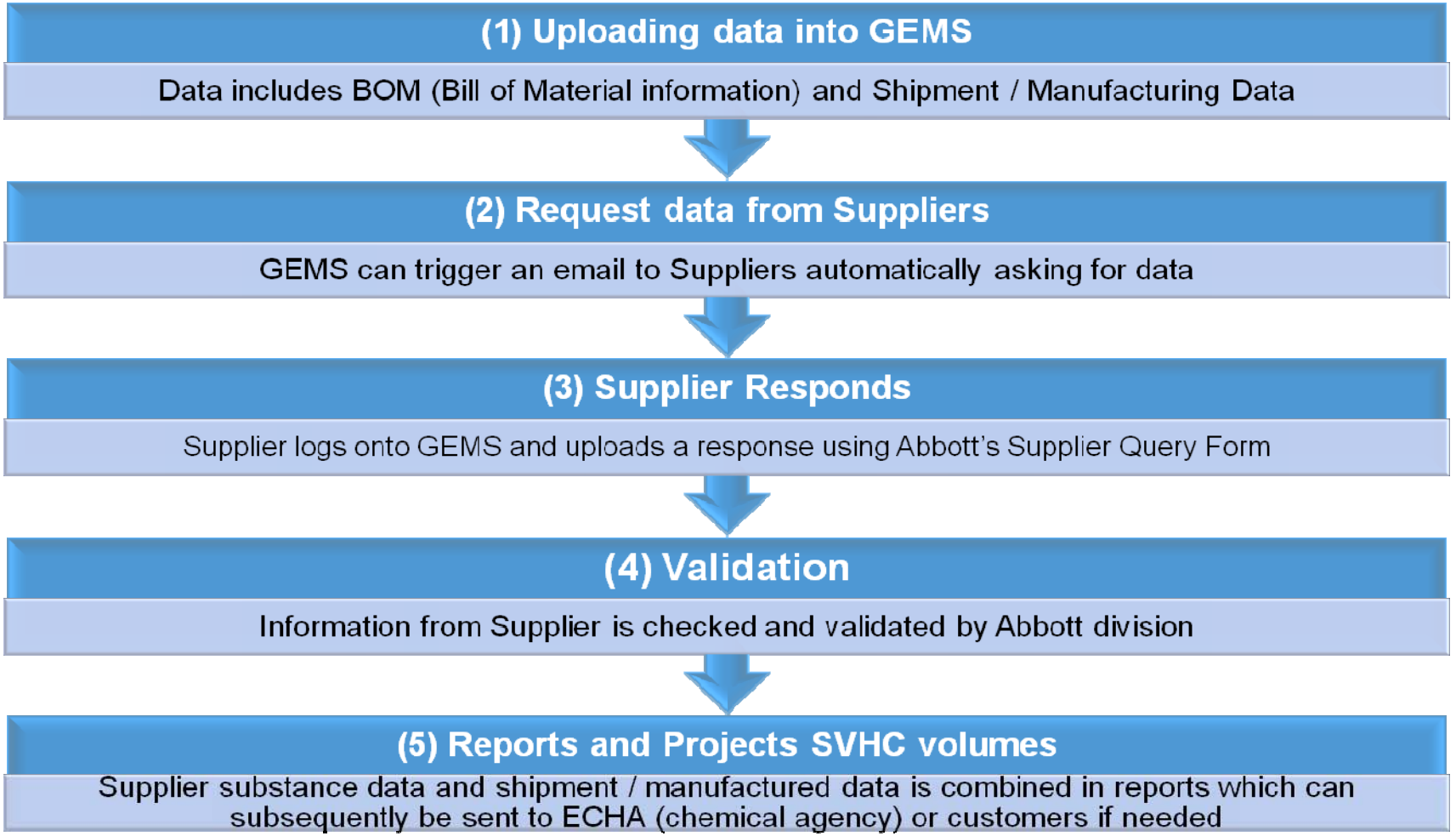
- **REACH** – Registration, Evaluation, Authorization of Chemicals *Regulation*
- **RoHS** – Restriction of Hazardous Substance *Directive*

Why GEMS is Needed?

GEMS will be used to address the following:

- Are SVHC's present at 0.1%w/w of an Article?
- Does Abbott import greater than 1 tonne / year of an SVHC into a European Legal Entity?
- Which parts or products containing SVHCs should be considered for redesign.
- Provide information for distributing notices to Professional Users and Customers

What will GEMS do? - Process Flow Chart



Abbott Expectations

- How will Abbott deal with restricted substances regulations?
- Obtain SVHC content information to:
  - Prepare for REACH Notification (to ECHA) starting June 2011
  - Plan projects to reduce use of SVHCs in today's product
  - Avoid using (new) materials containing SVHCs

How will this affect Supplier Agreements / Contracts / Specs.?

- Abbott will include restricted substances disclosure requirements in purchasing agreements/contracts/specifications
- Supplier cooperation is expected and contributes to overall supplier evaluation criteria

Success is built on supplier-customer relationship development over time

Supplier Query Process

- Suppliers will receive two emails
  - Credentials
  - Request for Substance Information (supplier query form)
- Log into GEMS Supplier Portal using Credentials provided
- Download supplier query form from GEMS application or use supplier query form provided via email
  - Substance Information email may not be received due to supplier's firewall protection policies and/or file size
- Complete supplier query form and save to hard drive
- Submit completed supplier query form via GEMS Supplier Portal

Data Composition Collection Process

- **Receipt of Emails**
- **Using the Supplier Portal**
- **Overview of Supplier Query Form**

Login Credentials Email Used For GEMS

Abbott GEMS Login Credentials
Abbott GEMS to:

09/21/2010 11:05 AM
Show Details

Dear Abbott Supplier,

As a valued supplier to Abbott, your support of our efforts to comply with various "restricted substances regulations" (e.g., REACH, RoHS, etc.) is critical. Reporting the chemical composition of the parts or packaging you provide to Abbott is an important and necessary step in these compliance efforts.

Enclosed below are login credentials to our Supplier Portal internet site (Foresite Systems - GEMS) in which you can provide substance/chemical information. A seperate email will be sent to you that contains a supplier query form for you to complete.

If this Supplier Query form is not received within the next 60 minutes, use the credentials provided below to log into the GEMS application and go to the "Forms published to you" section to download the form to be completed

username: ABBSUP_SHII7IJJJ
password: e4&uoham
Company PIN: 4038
Log in at: http://www3.foresitesystems.com/GEMS

If you have any questions, please contact us at abbott.reach@abbott.com

Thank you.
Abbott Labs

COPY and PASTE username and password avoiding extra blank characters at beginning and end of each. Blank spaces will count as characters and cause login failures in GEMS.

Request for Substance Information Email

Abbott Request for Substance Information
Abbott GEMS to:

NOTE: If this form is not received, go to the forms published to you section in GEMS Supplier Portal to download the form to be completed

09/29/2010 08:22 AM
Show Details

Dear Valued Supplier,

As a valued supplier to Abbott, your support of our efforts to comply with various "restricted substances regulations" (e.g., REACH, RoHS, etc.) is critical. Reporting the chemical composition of the parts or packaging you provide to Abbott is an important and necessary step in these compliance efforts.

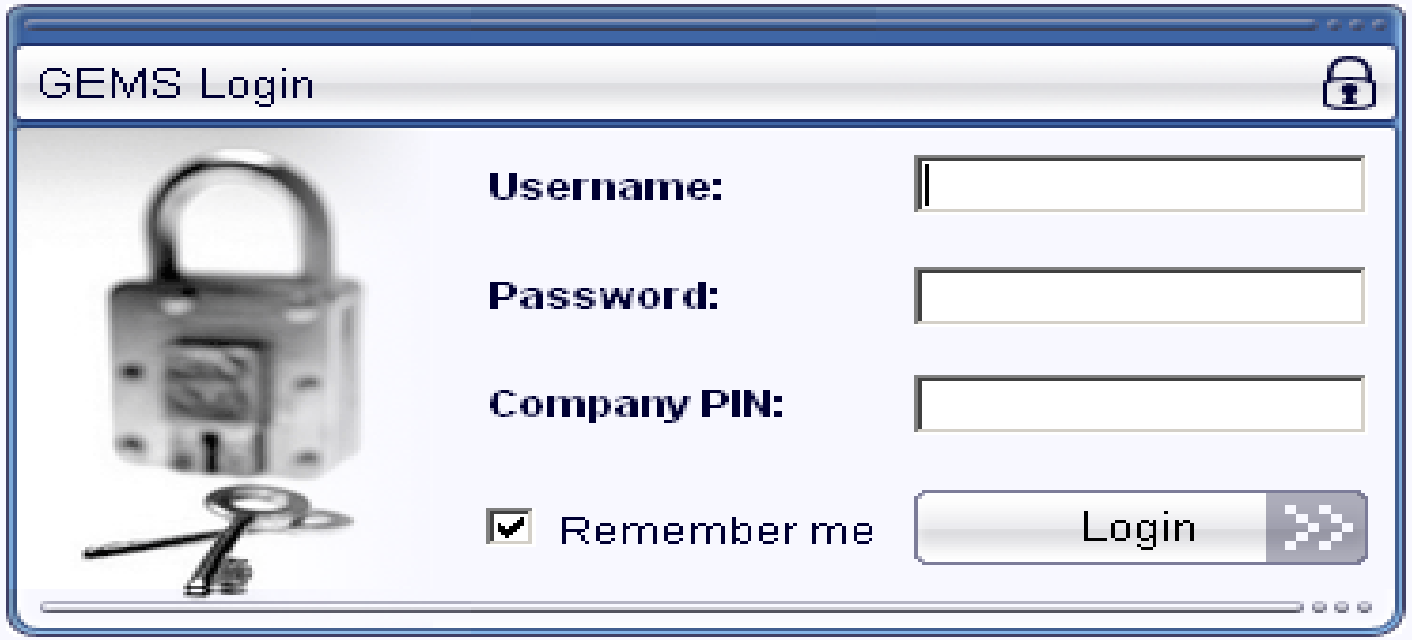
Accordingly, Abbott is asking each of its suppliers to provide chemical composition data for their supplied parts or packaging. Attached you will find some background information on our inquiry, along with reporting forms and general instructions. We appreciate your prompt response to this inquiry. If you have any questions or would like to discuss this inquiry in more detail, please contact Abbott at our REACH Mailbox (abbott.reach@abbott.com) for further information.

Many thanks.

Abbott Labs GEMS-6129-Supplier_Query_Form (August 2010)_New.xls

Double click file to open. Enable Macros and save file to hard drive before completion.

GEMS Login Screen



Not a registered user?

Visit www.foresitesystems.com for more information...

Has your customer asked you to subscribe?

Click here and have your reference ready...

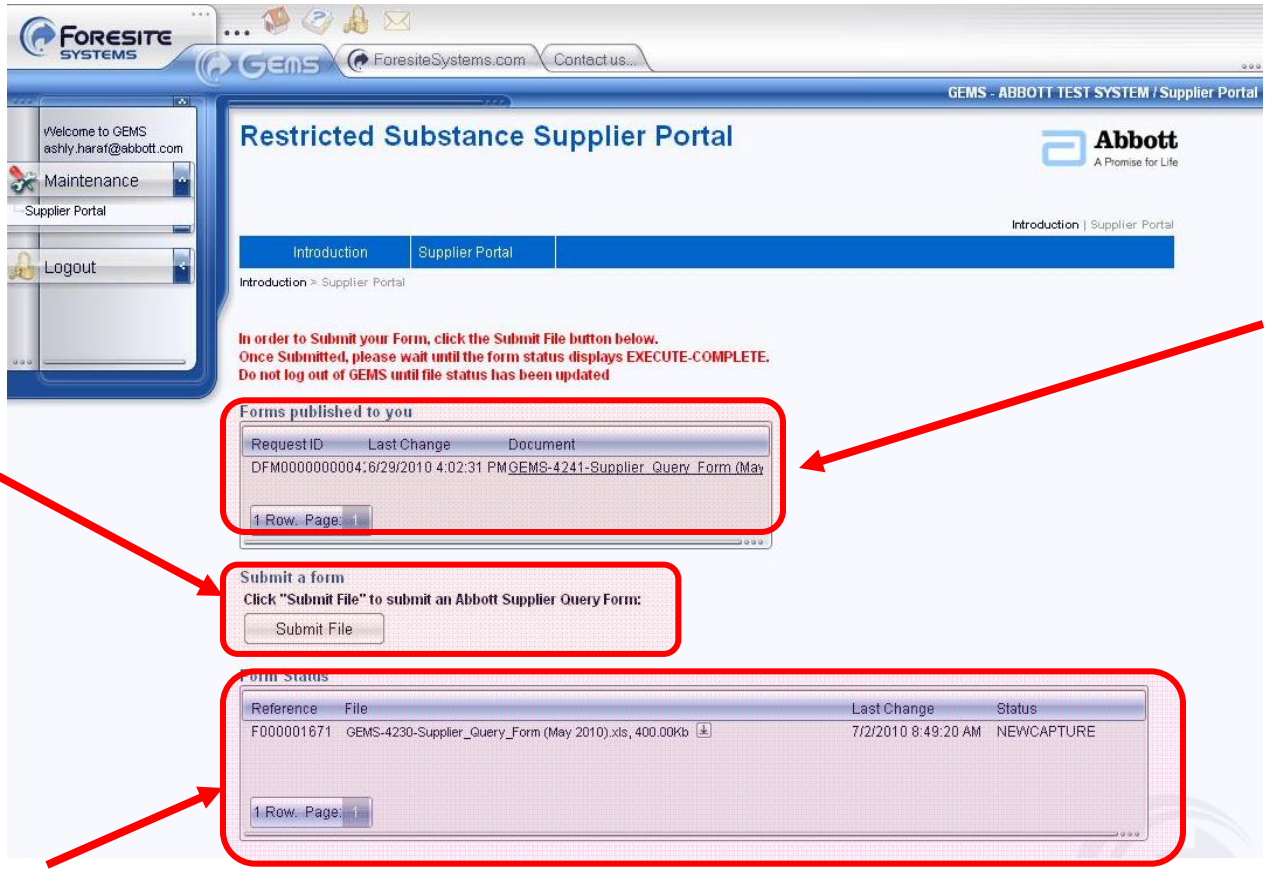
Using the Supplier Portal

The supplier portal is used to submit the Supplier Query Form/composition data into GEMS.
This screen will display after logging in.

Using the Supplier Portal

After clicking continue, this screen will display

This section allows the supplier to upload a form



This section displays a list of forms that have been previously sent through email. Suppliers can download the Supplier Query form from here

This section allows suppliers to review the status of their upload

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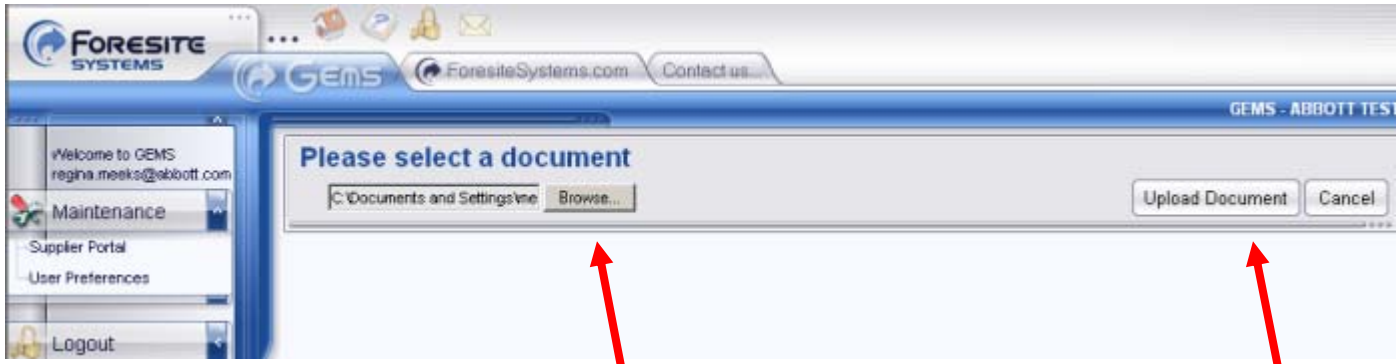
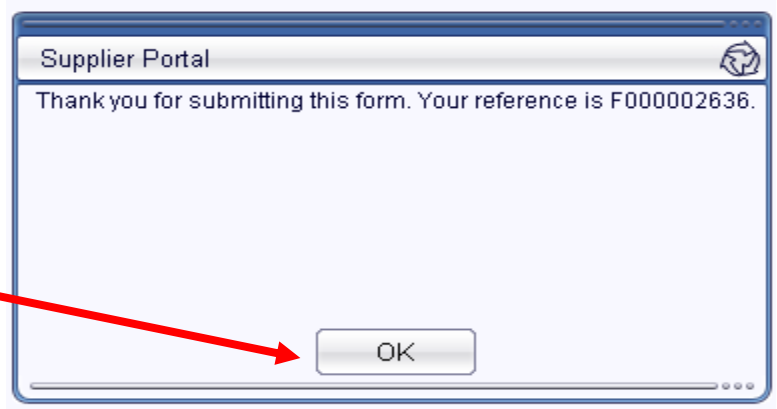
Using the Supplier Portal, cont.



Click the browse button

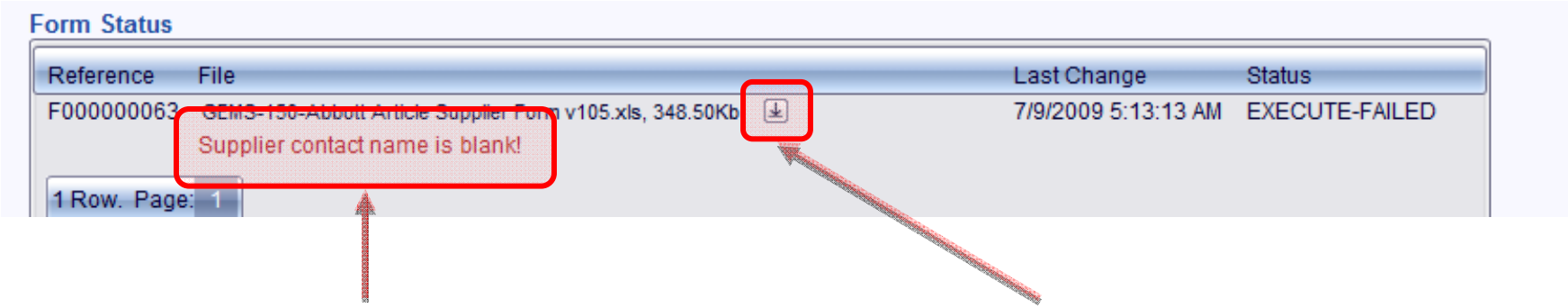
Click 'Upload Document'



Click 'ok' button

Using the Supplier Portal, cont.

The Supplier Portal will refresh every 30-60s to show the progress of the Supplier's upload. If the form is successful, it will return a status of "EXECUTE-COMPLETE"



An error message is displayed here if the form fails

To download forms previously uploaded, click this button

Supplier Query Form

Supplier Query Form – Overview

The supplier query form contains multiple worksheets to capture information from suppliers including:

Introduction – Provides the basis for Abbott data requests

Instructions – Overview of how to complete each sheet

Supplier Information – Critical identification information from supplier

Part List – Lists the parts uploaded into GEMS and fundamental questions

100% Disclosure – Worksheet for providing 100% composition data for a part

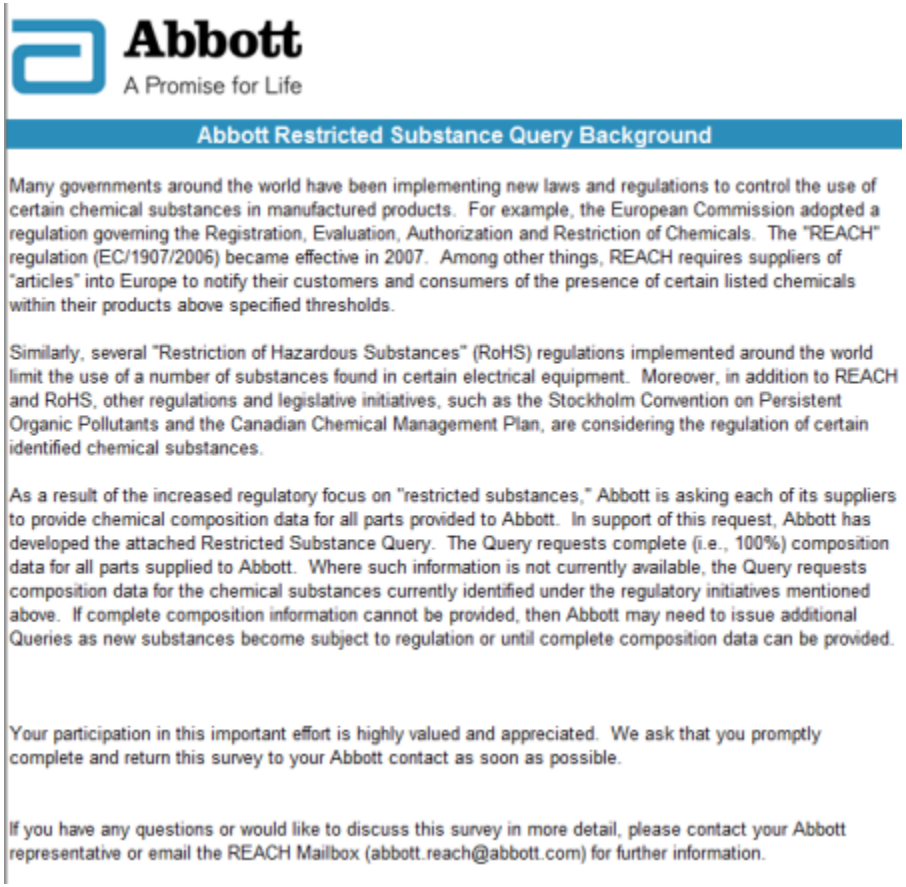
Packaging or Plastic Parts – Captures the Abbott minimum requirements for packaging or plastic containing parts

Electronic Parts – Captures the Abbott minimum requirements for electronic parts

Batteries – Worksheet for collecting information specific to battery directives

Supplier Query Form – Introduction & Instructions

Printer Friendly Introduction and Instructions



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Abbott Restricted Substance Query Background

Many governments around the world have been implementing new laws and regulations to control the use of certain chemical substances in manufactured products. For example, the European Commission adopted a regulation governing the Registration, Evaluation, Authorization and Restriction of Chemicals. The "REACH" regulation (EC/1907/2006) became effective in 2007. Among other things, REACH requires suppliers of "articles" into Europe to notify their customers and consumers of the presence of certain listed chemicals within their products above specified thresholds.

Similarly, several "Restriction of Hazardous Substances" (RoHS) regulations implemented around the world limit the use of a number of substances found in certain electrical equipment. Moreover, in addition to REACH and RoHS, other regulations and legislative initiatives, such as the Stockholm Convention on Persistent Organic Pollutants and the Canadian Chemical Management Plan, are considering the regulation of certain identified chemical substances.

As a result of the increased regulatory focus on "restricted substances," Abbott is asking each of its suppliers to provide chemical composition data for all parts provided to Abbott. In support of this request, Abbott has developed the attached Restricted Substance Query. The Query requests complete (i.e., 100%) composition data for all parts supplied to Abbott. Where such information is not currently available, the Query requests composition data for the chemical substances currently identified under the regulatory initiatives mentioned above. If complete composition information cannot be provided, then Abbott may need to issue additional Queries as new substances become subject to regulation or until complete composition data can be provided.

Your participation in this important effort is highly valued and appreciated. We ask that you promptly complete and return this survey to your Abbott contact as soon as possible.

If you have any questions or would like to discuss this survey in more detail, please contact your Abbott representative or email the REACH Mailbox (abbott.reach@abbott.com) for further information.

Introduction provides the background and basis for Abbott requesting composition data from suppliers.

Instructions provide step by step details for completion of the supplier query form.

Supplier Query Form – Supplier Information

Supplier Information

Request ID DFM0000000 **Supplier ID** ABBSRC26

Note: Request ID and Supplier ID are system generated fields

Supplier Name	Abbott Test Supplier #2702		
Address	100 Abbott Park Road		
Address (cont'd)			
City:	Abbottville	State/Province:	IL
Country:	USA	Postal Code:	60064

Supplier Contact Person #1 (providing/approving information)

Name	Chris Sprague
Title	
Phone:	
Fax #:	
Email Address:	chris.sprague@abbott.com

Supplier Contact Person #2 (approving information only)

Name	
Title	
Phone:	
Fax #:	
Email Address:	

Abbott Contact Person

Name	Gigi Nephew
Title	
Site:	Delkenheim
Phone:	
Fax #:	
Email Address:	

Note: All required fields are indicated in red

Supplier Mailing Address

Supplier Contact (1) Information

Supplier Contact (2) Information

Abbott Contact for Supplier

Supplier Query Form – Part List

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Part List

(Part/Item # and Name/Description to be inserted by Abbott)

Parts/Item #	Part/Item Name or Description	Does the part contain batteries?	Is the item/part present or used in electrical equipment?	Does this item contain a plastic?	Is this item a type of packaging?	What is the pre-dominant Packaging Material?	Item weight	Item Weight Unit Of Measure	Is Item Sold As Roll?	Item Length	Item Length Unit Of Measure
RMNT200 - Comp	RMNT Part 200 partial data composition	No	No	Yes	Yes	Plastic - Other	2.00000	oz	Yes		

Pre-populated part/item #

Location where part/item weight is captured

Required fields are indicated in red

Supplier Query Form – 100% Composition

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100% Composition Data

Note: If 100% composition is provided, then no additional information is needed for a part except for completion of the Batteries tab when the part contains a battery.

Insert Row | Delete Row(s)

Part	Substances	CAS Number	Proprietary / Trade Secret?	Substance Weight (mg)	Material Name	Material Weight (mg)
SAMPLEPART#						
	isopropanol	67-63-0	No	0.50000		
	2-Butoxyethanol	111-76-2	No	0.10000		
	Ethylene	[illegible]	No	0.10000		
	Water	7732-18-5	No	0.10000		
	Ammonia	7664-41-7	No	0.20000		
GP101						
	Triethyl Arsenate	15606-95-8	No	1000.00000		
	Lead Chromate	7758-97-6		2000.00000		

Example

No
Yes, substance is *not* an SVHC
Yes, substance is unknown

Enter substance weight (mg)

Part # selected from pull-down

Select if substance is proprietary

Supplier Query Form – Packaging & Plastic Parts

Note: This template contains substances from SVHC Lists 1-5

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Packaging and/or Plastic Parts Query

Parts/Item #	Autofill	Substance / Substance Group	CAS	Threshold Reporting Level	Substance Present	%	Source of Data?	Material	Material Weight (mg)
NTJC400-Comp		4'- Diaminodiphenylmethane (MDA)	101-77-9	Article .1 % w/w					
	Yes	dium dichromate	10588-01-9	Article .1 % w/w					
	No	dium dichromate	7789-12-0	Article .1 % w/w					
	Unknown	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	Article .1 % w/w					
		Anthracene	120-12-7	Article .1 % w/w					
		Diarsenic pentaoxide	1303-28-2	Article .1 % w/w					

Part # pre-populated

Autofill – use to populate "Substance Present" field with "Yes", "No", or "Unknown"

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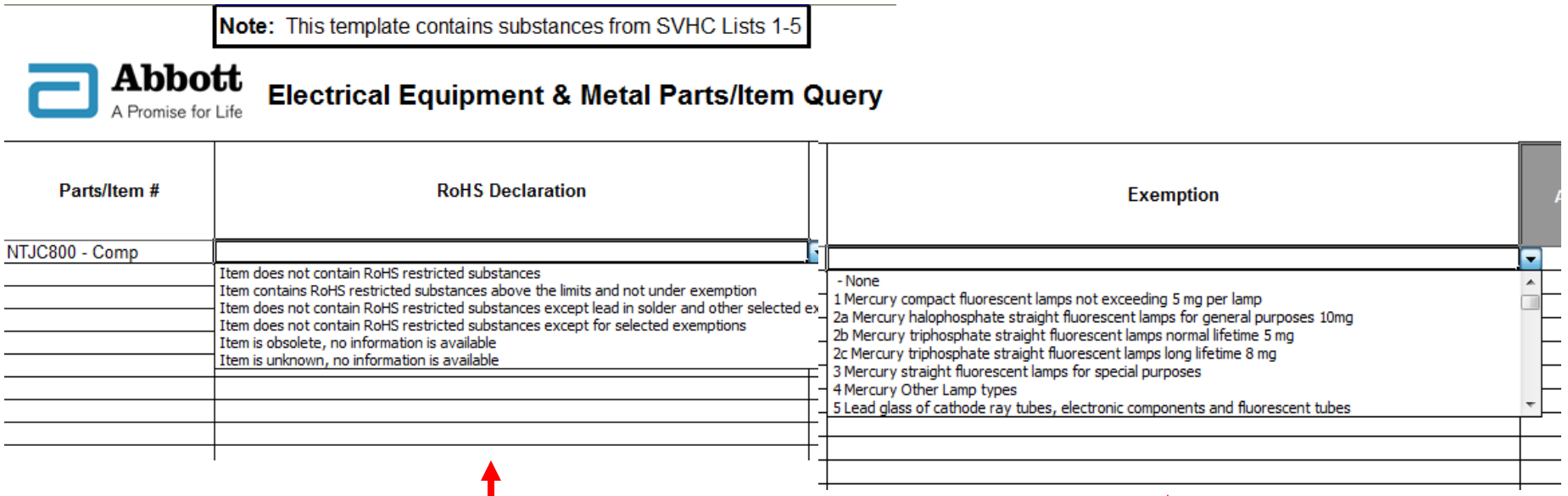
Supplier Query Form – Packaging & Plastic Parts

CAS	Threshold Reporting Level	Substance Present	%	Source of Data?	Material	Material Weight (mg)
101-77-9	Article .1 % w/w	No				
10588-01-9	Article .1 % w/w	No				
7789-12-0	Article .1 % w/w	No				
117-81-7	Article .1 % w/w	Yes	30.00		Coating	2
120-12-7	Article .1 % w/w	No				
1303-28-2	Article .1 % w/w	No				
1327-53-3	Article .1 % w/w	No				
15606-95-8	Article .1 % w/w	No				
25637-99-4	Article .1 % w/w	No				

Select Yes, No or Unknown for Substance Present, or use Autofill option

If selecting yes, % present must be entered

Supplier Query Form – Electrical & Metal Parts



Select the RoHS Declaration for the part

Select any exemptions that apply

Supplier Query Form – Electrical & Metal Parts, cont.

Autofill	Substance / Substance Group	CAS	Threshold Reporting Level	Substance Present?	% in Material / Article	Material Name	Weight of Homogenous Material (mg)	Source of Data?
Yes No Unknown	lybrominated Biphenyls (PBBs)	2052-07-5	Homogenous (.1 %)	No				
	lybrominated Biphenyls (PBBs)	2113-57-7	Homogenous (.1 %)	Yes	99.00	casing	2000.00	Internal Testing
	dmium /Cadmium Compounds	All Cadmium Compounds (Any CAS #)	Homogenous (.1 %)	No				
	Hexavalent Chromium/Hexavalent Chromium Co	All Hexavalent Chromium Compound (Any CAS#)	Homogenous (.1 %)	No				
	Lead/Lead Compounds	All Lead Substance (Any CAS #)	Homogenous (.1 %)	Yes	55.00	coating	1000.00	Internal Testing
	Mercury/Mercury Compounds	All Mercury Compound (Any CAS #)	Homogenous (.1 %)	No				
	Polybrominated Diphenylethers (PBDEs)		Homogenous (.1 %)	No				
	4,4'- Diaminodiphenylmethane (MDA)	101-77-9	Article .1 % w/w	No				
	Sodium dichromate	10588-01-9	Article .1 % w/w	No				
	Sodium dichromate	7789-12-0	Article .1 % w/w	No				
	Bis (2-ethylhexyl) phthalate (DEHP)	117-81-7	Article .1 % w/w	No				
	Anthracene	120-12-7	Article .1 % w/w	No				

Autofill – used to populate "Substance Present" field with "Yes", "No", or "Unknown"

All Homogenous substances require a Material Name

Article - Objects where shape, surface or design determines its function to a greater degree than its chemical composition

Homogenous Material - Material of uniform composition throughout which cannot be mechanically disjointed (i.e. surface coating, metal lead, plastic)

Supplier Query Form – Batteries

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Battery List

Parts/Item #	Battery Type	Other Battery Number	Battery Composition	Rechargeable	Removable	Battery Weight (g)
	19324	--	Sealed Lead Acid	No	No	193
	AAA	--	Alkaline	No	Yes	11
	013378-01 07	--	Nickel Metal Hydrate	Yes	Yes	15

NTJC300 - Comp
NTJC510 - Comp
NTJC600 - Comp

TL-5104 - Lithium, Non-Rechargeable, 17.6g
UB1280 - Sealed Lead Acid, Rechargeable, 2300g
ULB U9VL-FP-6 - Lithium, Non-Rechargeable, 36.4002g
ULB U9VL-JPC - Lithium, Non-Rechargeable, 36.4002g
VH 2000 - Sealed Lead Acid, Rechargeable, 31300g
X92 - Alkaline, Non-Rechargeable, 11.5g
Yuasa NPW45-12 - Lead, Non-Rechargeable, 2700g
Other

Select Parts/ Item # from drop down

Select battery type from drop down, remaining columns will be auto - populated

If Battery Type is not shown in the drop down, select 'Other' and enter battery number in 'Other Battery Number'. Complete all fields in red.

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Battery List

Parts/Item #	Battery Type	Other Battery Number	Battery Composition	Rechargeable	Removable	Battery Weight (g)
NTJC400 - Cc	Other					

Material Query Form

Material Query Form – Overview

The material query form contains multiple worksheets to capture information from suppliers including:

Introduction – Provides the basis for Abbott data requests

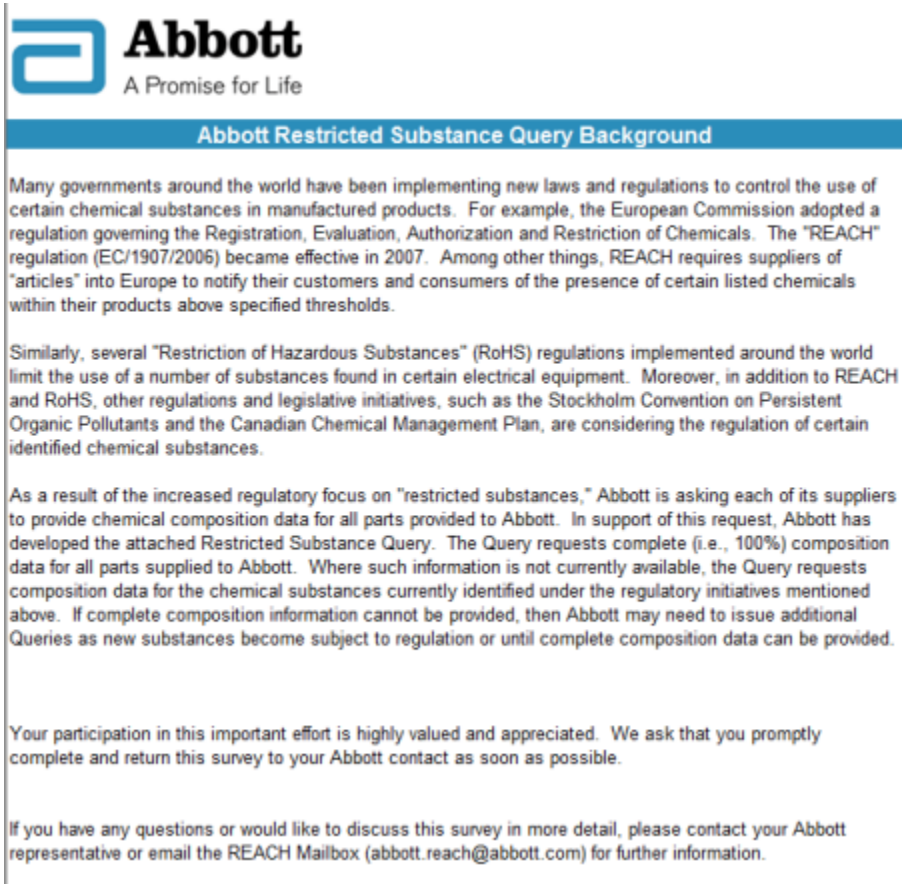
Instructions – Overview of how to complete each sheet

Supplier Information – Critical identification information from supplier

100% Disclosure – Worksheet for providing 100% composition data for a part

Material Query Form – Introduction & Instructions

Printer Friendly Introduction and Instructions



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Introduction provides the background and basis for Abbott requesting composition data from suppliers.

Instructions provide step by step details for completion of the supplier query form.

Material Query Form – Supplier Information

Supplier Information

Request ID DFM0000000 **Supplier ID** SBESRC26

Note: Request ID and Supplier ID are system generated fields

Note: All required fields are indicated in red

Supplier Name	Abbott Test Supplier #2702		
Address	100 Abbott Park Road		
Address (cont'd)			
City:	Abbottville	State/Province:	IL
Country:	USA	Postal Code:	60064

Supplier Mailing Address

Supplier Contact Person #1 (providing/approving information)

Name	Chris Sprague
Title	
Phone:	
Fax #:	
Email Address:	chris.sprague@abbott.com

Supplier Contact (1) Information

Supplier Contact Person #2 (approving information only)

Name	
Title	
Phone:	
Fax #:	
Email Address:	

Supplier Contact (2) Information

Abbott Contact Person

Name	Gigi Nephew
Title	
Site:	Delkenheim
Phone:	
Fax #:	
Email Address:	

Abbott Contact for Supplier

Material Query Form – 100% Composition

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100% Composition Data

Insert Row | Delete Row(s)

Part	Substances	CAS Number	Proprietary / Trade Secret?	% of Substance
SAMPLEPART#				
	isopropanol	67-63-0	No	20.00000
	2-Butoxyethanol	111-76-2	No	30.00000
	Ethylene	[illegible]	No	15.00000
	Water	7732-18-5	No	10.00000
	Ammonia	7664-41-7	No	25.00000
BB400				
	Chromic Acid	7738-94-5	No	45.00000
	Cobalt	10141-05-6	No	50.00000
			Yes, substance is *not* an SVHC	5.00000

Example

No
Yes, substance is *not* an SVHC
Yes, substance is unknown

Select Part/Item # from pull-down

Select if substance is proprietary

Enter % of substance

Certificates and Documents

- Send certificates and documents to REACH mailbox
- Clearly state component part number that the document needs to be linked to

Questions? Contact us at:

Abbott.REACH@Abbott.com

Additional References and Definitions

Substance Very High Concern List 1 (Oct. 2008)

Substance Name	EC #	CAS #	Potential Uses
Anthracene	204-371-1	120-12-7	dye and other manufacturing
4,4'-Diaminodiphenylmethane (MDA)	202-974-4	101-77-9	used in the preparation of isocyanates and polyisocyanates, used as an epoxy hardening agent, in polyurethane elastomers, as a curative for neoprene, an anti-frosting agent in footwear, in Qiana Nylon, in the preparation of poly(amide-imide) resins
Dibutyl phthalate (DBP)	201-557-4	84-74-2	plasticizer, adhesive, sealant, paint, widely used in consumer articles
Cobalt dichloride	231-589-4	7646-79-9	Drying agents such as silica gel, moisture detection in electroplating, used in the manufacture of vitamin B-12, can be present in fertilizer and feed additive in trace amounts, and has been used as a germicide
Diarsenic pentaoxide	215-116-9	1303-28-2	dyes, metal alloys, glass
Diarsenic trioxide	215-481-4	1327-53-3	alloys and semiconductors
Sodium dichromate, dihydrate	234-190-3	7789-12-0 / 10588-01-9	chromium compounds
5-t-butyl-2,4,6-trinitro-m-xylene (musk xylene)	201-329-4	81-15-2	cosmetics and detergents
Bis (2-ethyl hexyl) phthalate (DEHP)	204-211-0	117-81-7	plasticizers, adhesive, sealant, paint, widely used in consumer articles
Hexabromocyclododecane (HBCCD)	221-695-9	25637-99-4	flame retardant (polystyrene/textiles)
Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	287-476-5	85535-84-8	flame retardants
Bis(tributyltin) oxide (TBTO)	200-268-0	56-35-9	chemical intermediate
Lead hydrogen arsenate	232-064-2	7784-40-9	circuit boards
Triethyl Arsenate	427-700-2	15606-95-8	Biocide for wood preservative or component in glass, grouts, ship paints, and fertilizers
Benzyl butyl phthalate (BBP)	201-622-7	85-68-7	plasticizers, adhesive, sealant, paint, widely used in consumer articles

Substance Very High Concern List 2 (Jan. 2010)

Substance Name	EC #	CAS #	Potential Uses
Anthracene Oil	292-602-7	90640-80-5	Red dye Alizarin, wood preservative, insecticides, coating material found in tar or asphalt
Anthracene oil, anthracene paste, distn. lights	295-278-5	91995-17-4	A complex combination of hydrocarbons from the distillation of anthracene obtained by crystallization of anthracene oil from bituminous high temperature tar. It contains chiefly trinuclear aromatics and their dihydro derivatives
Anthracene oil, anthracene paste, anthracene fraction	295-275-9	91995-15-2	A complex combination of hydrocarbons from the distillation of anthracene obtained by the crystallization of anthracene oil from bituminous high temperature tar. It contains chiefly anthracene, carbazole and phenanthrene
Anthracene oil, anthracene-low	292-604-8	90640-82-7	The oil remaining after the removal, by a crystallization process, of an anthracene-rich solid (anthracene paste) from anthracene oil.
Anthracene oil, anthracene paste	292-603-2	90640-81-6	The anthracene-rich solid obtained by the crystallization and centrifuging of anthracene oil. It is composed primarily of anthracene, carbazole and phenanthrene
Diisobutyl phthalate	201-553-2	84-69-5	Plasticizer, used in PVC plastics, binding agent in adhesives, viscosity adjuster, and used in cosmetics
2,4-dinitrotoluene	204-450-0	121-14-2	Gelatinizing and waterproofing agent in explosives and can be used as a chemical used in rubber and/or plastic manufacturing
Pitch, coal tar, high-temp	266-028-2	65996-93-2	The residue from the distillation of high temperature coal tar. Composed primarily of a complex mixture of three or more membered condensed ring aromatic hydrocarbons
Tris(2-chloroethyl) phosphate	204-118-5	115-96-8	Plasticizer and viscosity regulator with flame-retardant properties for polyurethanes (flexible and rigid), polyester resins, polyacrylates, polyvinyl chloride, cellulose derivatives and other polymers.
Aluminosilicate Refractory Ceramic Fibres	N/A		Fibers used in high temperature insulation.
Zirconia Aluminosilicate Refractory ceramic Fibres	N/A		Fibers used in high temperature insulation
Lead sulfochromate yellow	215-693-7	1344-37-2	Identified in the Color Index by Color Index Constitution Number, C.I. 77603
Lead chromate molybdate sulfate red	235-759-9	12656-85-8	Identified in the Color Index by Color Index Constitution Number, C.I. 77605
Lead chromate	231-846-0	7758-97-6	Pigment in industrial paints, rubber, fabrics/textiles and plastics
Acrylamide	201-173-7	79-06-1	Monomer for polyacrylamide and used in adhesives, paper production, contact lenses and gelatin capsules, also a by-product of high temperature cooking of foods

Substance Very High Concern List 3 (June 2010)

Substance Name	EC #	CAS #	Potential Uses
Trichloroethylene	201-167-4	79-01-6	Cleaning and degreasing of metal parts, Solvent in adhesives, Intermediate in the manufacture of chlorinated and fluorinated organic compounds
Boric acid	233-139-2 234-343-4	10043-35-3 / 11113-50-1	Uses include a multitude of applications, e.g, in biocides and preservatives, personal care products, food additives, glass, ceramics, rugger, fertilizers, flame retardants, paints, industrial fluids, brake fluids, soldering products, film developers
Disodium tetraborate, anhydrous	215-540-4	1330-43-4 12179-04-3 1303-96-4	Uses include a multitude of applications, e.g, in glass and glass fibers, ceramics, detergents and cleaners, personal care products, industrial fluids, metallurgy, adhesives, flame retardants, biocides, fertilizers.
Tetraboron disodium heptaoxide, hydrate	235-541-3	12267-73-1	Uses include a multitude of applications, e.g. in glass and glass fibers, ceramics, detergents and cleaners, personal care products, industrial fluids, metallurgy, adhesives, flame retardants, biocides, fertilizers
Potassium dichromate	231-906-6	7778-50-9	Chrome metal manufacturing, treatment and coating of metals, manufacture of reagents and chemicals, Laboratory (analytical agent) cleaning of laboratory glassware, tanning of leather, manufacture of textiles, photolithography, wood treatment, corrosion inhibitor in cooling systems
Ammonium dichromate	232-143-1	7789-09-5	Oxidizing agent, Laboratory (analytical agent), tanning of leather, manufacture of textiles, manufacture of photosensitive screens (cathode ray tubes), metal treatment
Potassium chromate	232-140-5	7789-00-6	Treatment and coating of metals, Manufacture of reagents and chemicals, manufacture of textiles, coloring agent in ceramics, tanning and dressing of leather, manufacture of pigments/inks, laboratory (analytical reagent), pyrotechnics
Sodium chromate	231-889-5	7775-11-3	Laboratory (analytical agent), Manufacture of other chromium compounds

Substance Very High Concern List 4 (Dec. 2010)

Substance Name	EC #	CAS #	Potential Uses
Cobalt(II) sulphate	233-334-2	10124-43-3	Mainly used in the production of other chemicals. Further applications may include manufacture of catalysts and driers, surface treatments (such as electroplating), corrosion prevention, production of pigments, decolorizing (in glass, pottery), batteries, animal food supplement, soil fertilizer, and others.
Cobalt(II) dinitrate	233-402-1	10141-05-6	Mainly used in the production of other chemicals and the manufacture of catalysts. Further applications may include surface treatment and batteries.
Cobalt(II) carbonate	208-169-4	513-79-1	Mainly used in the manufacture of catalysts. Minor uses may include feed additive, production of other chemicals, production of pigments, and adhesion (in ground coat frit).
Cobalt(II) diacetate	200-755-8	71-48-7	Mainly used in the manufacture of catalysts. Minor uses may include production of other chemicals, surface treatment, alloys, and production of pigments, dyes, rubber adhesion, and feed additive.
2-Methoxyethanol	203-713-7	109-86-4	Mainly used as solvent, chemical intermediate and additive for fuels.
2-Ethoxyethanol	203-804-1	110-80-5	Mainly used as solvent and chemical intermediate.
Chromium trioxide	215-607-8	1333-82-0	Used for metal finishing and as fixing agent in waterborne wood preservatives.
Acids generated from chromium trioxide and their oligomers:			These acids and their oligomers are generated when chromium trioxide is dissolved in water. Chromium trioxide is mainly used in form of aqueous solutions. Consequently, the uses of these substances are the same as indicated for chromium trioxide.
Chromic acid	231-801-5	7738-94-5	This includes Oligomers of chromic acid and dichromic acid. CAS #'s have not yet been assigned. These acids and their oligomers are generated when chromium trioxide is dissolved in water. Chromium trioxide is mainly used in form of aqueous solutions. Used for metal finishing and as fixing agent in waterborne wood preservatives.
Dichromic acid	236-881-5	13530-68-2	This includes Oligomers of chromic acid and dichromic acid. CAS #'s have not yet been assigned. These acids and their oligomers are generated when chromium trioxide is dissolved in water. Chromium trioxide is mainly used in form of aqueous solutions. Used for metal finishing and as fixing agent in waterborne wood preservatives.
Oligomers of chromic acid and dichromic acid	-	-	

Substance Very High Concern List 5 (June 2011)

Substance Name	EC #	CAS #	Potential Uses
Cobalt Dichloride	231-589-4	7646-79-9	Drying agents such as silica gel, moisture detection in electroplating, used in the manufacture of vitamin B-12, can be present in fertilizer and feed additive in trace amounts, and has been used as a germicide.
2-Ethoxyethyl acetate	203-839-2	111-15-9	2-Ethoxyethyl acetate (hereafter referred to as 2-EEA) belongs to the group of glycol ethers which are mainly used as solvents.
Strontium Chromate	232-142-6	7789-06-2	Used as rust- and corrosion-resistant pigment in paints, varnishes and oil colors.
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	271-084-6	68515-42-4	Is principally used in Canada as a plasticizer for PVC (polyvinyl chloride) which may currently or was previously used in a variety of applications such as industrial, automotive, and construction materials.
Hydrazine	206-114-9	7803-57-8 / 302-01-2	To be used in chromium electro-plating\metal surface coatings, making chromium catalyst\chrome oxide green\chrome yellow. Also can be used as oxidant\mordant\timber preservation.
1-methyl-2-pyrrolidone	212-828-1	872-50-4	Widely used for aromatics extraction, acetylene, alkene and diene purification, also used for the polymer solvents and polymeriz Widely used for aromatics extraction, acetylene, alkene and diene purification, also used for the polymer solvents and polymerization medium, such as polyamide, polyimide, polyphenylene sulphide
1,2,3-trichloropropane	202-486-1	96-18-4	Used historically as a paint and varnish remover, cleaning and degreasing agent, and a cleaning and maintenance solvent, and more currently as a chemical intermediate (NTP, 2005). Its use as a pesticide was in formulations with dichloropropenes in the manufacture of D-D, a soil fumigant. Also described 1,2,3-TCP as having various industrial uses and historic pesticide uses, with the primary possible contaminating activity appearing to be hazardous waste sites.
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters C7-rich	276-158-1	71888-89-6	Principally used with polymers as an additive to impart flexibility in polyvinylchloride (PVC) resins. PVC-containing phthalate ester applications include flooring and wall coverings. Polymers containing phthalate ester applications that are non-PVC based include cellulose plastics, rubbers and selected paints and adhesives (OECD, 2005). In Australia, DiHepP is imported for use as a specialist PVC plasticiser and in screen printing inks.

Substance Very High Concern List 6 (Dec 2011), page 1 of 2

Substance Name	EC #	CAS #	Potential uses
Dichromium tris(chromate)	246-356-2	24613-89-6	Mainly used in mixtures for metal surface treatment in the aeronautic/aerospace, steel and aluminium coating sectors.
Potassium hydroxyoctaoxodizincatedi-chromate	234-329-8	11103-86-9	Mainly used in coatings in the aeronautic/ aerospace, steel and aluminium coil coating and vehicle coating sectors
Pentazinc chromate octahydroxide	256-418-0	49663-84-5	Mainly used in coatings in the vehicle coating and aeronautic / aerospace sectors
Aluminosilicate Refractory Ceramic Fibres (RCF)	-	-	Refractory ceramic fibres are used for high-temperature insulation, almost exclusively in industrial applications (insulation of industrial furnaces and equipment, equipment for the automotive and aircraft/aerospace industry) and in fire protection (buildings and industrial process equipment).
Zirconia Aluminosilicate Refractory Ceramic Fibres (Zr-RCF)	-	-	Refractory ceramic fibres are used for high-temperature insulation, almost exclusively in industrial applications (insulation of industrial furnaces and equipment, equipment for the automotive and aircraft/aerospace industry) and in fire protection (buildings and industrial process equipment).
Formaldehyde, oligomeric reaction products with aniline (technical MDA)	500-036-1	25214-70-4	Mainly used for manufacture of other substances. Minor uses are as hardener for epoxy resins, e.g. for the production of rolls, pipes and moulds, and as well for adhesives
Bis(2-methoxyethyl) phthalate	204-212-6	117-82-8	No registration for this phthalate compound has been submitted to ECHA. Hence, the substance seems not to be manufactured in or imported to the EU in quantities above 1 t/y. Main uses in the past were as plasticiser in polymeric materials and paints, lacquers and varnishes, including printing inks.
2-Methoxyaniline; o-Anisidine	201-963-1	90-04-0	Mainly used in the manufacture of dyes for tattooing and coloration of paper, polymers and aluminium foil.
4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-Octylphenol)	205-426-2	140-66-9	Mainly used in the manufacture of polymer preparations and of ethoxylates. Further used as a component in adhesives, coatings, inks and rubber articles

Substance Very High Concern List 6 (Dec 2011), page 2 of 2

Substance Name	EC #	CAS #	Potential uses
1,2-Dichloroethane	203-458-1	107-06-2	Mainly used for manufacture of other substances. Minor uses as solvent in the chemical and pharmaceutical industry.
Bis(2-methoxyethyl) ether	203-924-4	111-96-6	Used primarily as a reaction solvent or process chemical in a wide variety of applications. Used also as solvent for battery electrolytes, and possibly in other products such as sealants, adhesives, fuels and automotive care products.
Arsenic acid	231-901-9	7778-39-4	Mainly used to remove gas bubbles from ceramic glass melt and in the production of laminated printed circuit boards
Calcium arsenate	231-904-5	7778-44-1	Calcium arsenate is present in complex raw materials imported for manufacture of copper, lead and a range of precious metals. It appears mainly to be used as precipitating agent in copper smelting and to manufacture diarsenic trioxide. However, most of the substance seems to be disposed of as waste.
Trilead diarsenate	222-979-5	3687-31-8	Trilead diarsenate is present in complex raw materials imported for manufacture of copper, lead and a range of precious metals. The trilead diarsenate contained in the raw materials is in the metallurgical refinement process transformed to calcium arsenate and diarsenic trioxide. Whereas most of the calcium arsenate appears to be disposed of as waste the diarsenic trioxide is used further.
N,N-dimethylacetamide (DMAC)	204-826-4	127-19-5	Used as solvent, mainly in the manufacture of various substances and in the production of fibres for clothing and other applications. Also used as reagent, and in products such as industrial coatings, polyimide films, paint strippers and ink removers.
2,2'-dichloro-4,4'-methylenedianiline (MOCA)	202-918-9	101-14-4	Mainly used as curing agent in resins and in the production of polymer articles and also for manufacture of other substances. The substance may further be used in construction and arts
Phenolphthalein	201-004-7	77-09-8	Mainly used as laboratory agent (in pH indicator solutions), for the production of pH-indicator paper and in medicinal products.
Lead azide Lead diazide	236-542-1	13424-46-9	Mainly used as initiator or booster in detonators for both civilian and military uses and as initiator in pyrotechnic devices.
Lead styphnate	239-290-0	15245-44-0	Mainly used as a primer for small calibre and rifle ammunition. Other common uses are in munition pyrotechnics, powder actuated devices and detonators for civilian use
Lead dipicrate	229-335-2	6477-64-1	No registration for this substance has been submitted to ECHA. Lead dipicrate is an explosive like lead diazide and lead styphnate. It may be used in low amounts in detonator mixtures together with the two other mentioned lead compounds

ECHA website:

Proposed list:http://echa.europa.eu/consultations/authorisation/svhc/svhc_cons_en.asp

Candidate list: http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp

Definitions

- **Article**: An object which during production is given a special shape, surface, or design which determines its function to a greater degree than does its chemical composition
- **Bill of Materials**: List of items, components, sub-assemblies, modules, materials and substances used to make up an article, part or product
- **CAS**: Chemical Abstract Service is a division of the American Chemical Society which catalogues and indexes chemical substances. A CAS number is a unique identifier of a substance.
- **Certificate of Compliance (CoC)**: Represents an authorized legal statement serving as a declaration that a given part is compliant with the law.
- **Classified**: Refers to a Product or BOM that contains at least one other item
- **Component**: A supplier/vendor part which constitutes part of an AML (Approved Manufacturer List)
- **Homogenous Material**: Material of uniform composition which cannot be mechanically disjointed
- **Importer**: Any natural or legal person established within the community who is responsible for import (i.e. the physical introduction into the customs territory of the community)

Definitions

- **Preparation**: A mixture or solution composed of two or more substances
- **Producer**: Any natural or legal person who makes or assembles an article within the community
- **Registrant**: The manufacturer or the importer of a substance or the producer or importer of an article submitting a registration for a substance
- **Source ID**: Refers to the supplier ID associated with a supplier/manufacturer part
- **Substance**: A chemical element and its compounds in the natural state or obtained by any manufacturing process, including additives necessary to preserve stability and impurities deriving from the process used, but excluding any solvent which may be separated without affecting stability or composition

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