High Heat Syringe Part A
J-B Weld Company LLC

Version No: **1.1**
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **03/29/2021**
Print Date: **03/31/2021**
S.GHS.USA.EN

SECTION 1 Identification

Product Identifier

Product name	High Heat Syringe Part A
Synonyms	50197 (High Heat Syringe) Part A
Other means of identification	Not Available

Recommended use of the chemical and restrictions on use

Relevant identified uses	Use according to manufacturer's directions.

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	**J-B Weld Company LLC**
Address	400 CMH Road Sulphur Springs TX 75482 United States
Telephone	903-885-7696
Fax	Not Available
Website	WWW.JBWeld.com
Email	info@JBWeld.com

Emergency phone number

Association / Organisation	**InfoTrac**
Emergency telephone numbers	Transportation Emergencies: 800-535-5053 or (24 hours)
Other emergency telephone numbers	Poison Control Centers: Medical Emergencies 800-222-1222 (24 hours)

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

Classification	Eye Irritation Category 2A, Skin Corrosion/Irritation Category 2, Skin Sensitizer Category 1A

Label elements

Hazard pictogram(s)	
Signal word	**Warning**

Hazard statement(s)

H319	Causes serious eye irritation.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.

Hazard(s) not otherwise classified

Not Applicable

Supplementary statement(s)

Not Applicable

Precautionary statement(s) Prevention

P280	Wear protective gloves/protective clothing/eye protection/face protection.

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P261	Avoid breathing mist/vapours/spray.
P272	Contaminated work clothing should not be allowed out of the workplace.

Precautionary statement(s) Response

P362	Take off contaminated clothing and wash before reuse.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
Not Available	80-95	bisphenol F diglycidyl ether copolymer (Confidential CAS#)
25068-38-6*	10-20	bisphenol A diglycidyl ether polymer
67762-90-7	1-5	silica amorphous
7439-89-6	1-5	iron

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 First-aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▸ Wash out immediately with fresh running water. ▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▸ Seek medical attention without delay; if pain persists or recurs seek medical attention. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin contact occurs: ▸ Immediately remove all contaminated clothing, including footwear. ▸ Flush skin and hair with running water (and soap if available). ▸ Seek medical attention in event of irritation.
Inhalation	▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area. ▸ Other measures are usually unnecessary.
Ingestion	▸ Immediately give a glass of water. ▸ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Fire-fighting measures

Extinguishing media

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.

Special protective equipment and precautions for fire-fighters

Fire Fighting	▸ When silica dust is dispersed in air, firefighters should wear inhalation protection as hazardous substances from the fire may be adsorbed on the silica particles.

Continued...

	▸ When heated to extreme temperatures, (>1700 deg.C) amorphous silica can fuse. ▸ Alert Fire Department and tell them location and nature of hazard. ▸ Wear breathing apparatus plus protective gloves in the event of a fire.
Fire/Explosion Hazard	▸ When silica dust is dispersed in air, firefighters should wear inhalation protection as hazardous substances from the fire may be adsorbed on the silica particles. ▸ When heated to extreme temperatures, (>1700 deg.C) amorphous silica can fuse. ▸ Non combustible. ▸ Not considered a significant fire risk, however containers may burn. Decomposition may produce toxic fumes of: silicon dioxide (SiO2) metal oxides May emit corrosive fumes.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	▸ Clean up all spills immediately. ▸ Avoid contact with skin and eyes.
Major Spills	Minor hazard. ▸ Clear area of personnel.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs.
Other information	▸ Store in original containers. ▸ Keep containers securely sealed.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Polyethylene or polypropylene container. ▸ Packing as recommended by manufacturer.
Storage incompatibility	The substance may be or contains a 'metalloid' The following elements are considered to be metalloids; boron,silicon, germanium, arsenic, antimony, tellurium and (possibly) polonium The electronegativities and ionisation energies of the metalloids are between those of the metals and nonmetals, so the metalloids exhibit characteristics of both classes. The reactivity of the metalloids depends on the element with which they are reacting. Silicas: ▸ react with hydrofluoric acid to produce silicon tetrafluoride gas ▸ react with xenon hexafluoride to produce explosive xenon trioxide ▸ reacts exothermically with oxygen difluoride, and explosively with chlorine trifluoride (these halogenated materials are not commonplace industrial materials) and other fluorine-containing compounds ▸ may react with fluorine, chlorates ▸ are incompatible with strong oxidisers, manganese trioxide, chlorine trioxide, strong alkalis, metal oxides, concentrated orthophosphoric acid, vinyl acetate ▸ may react vigorously when heated with alkali carbonates. ▸ Avoid strong acids, bases.

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Limits (PELs) Table Z-3	silica amorphous	Amorphous, including natural diatomaceous earth	80 (%SiO2) mg/m3 / 20 mppcf	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	silica amorphous	Silica, amorphous	6 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-3	iron	Inert or Nuisance Dust: Total Dust	15 mg/m3 / 50 mppcf	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-3	iron	Inert or Nuisance Dust: Respirable fraction	5 mg/m3 / 15 mppcf	Not Available	Not Available	Not Available

Continued...

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Limits (PELs) Table Z-1	iron	Particulates Not Otherwise Regulated (PNOR)-Respirable fraction	5 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-1	iron	Particulates Not Otherwise Regulated (PNOR)-Total dust	15 mg/m3	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	iron	Particulates not otherwise regulated	Not Available	Not Available	Not Available	See Appendix D

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
bisphenol A diglycidyl ether polymer	90 mg/m3	990 mg/m3	5,900 mg/m3
silica amorphous	18 mg/m3	200 mg/m3	1,200 mg/m3
silica amorphous	18 mg/m3	100 mg/m3	630 mg/m3
silica amorphous	120 mg/m3	1,300 mg/m3	7,900 mg/m3
silica amorphous	45 mg/m3	500 mg/m3	3,000 mg/m3
silica amorphous	18 mg/m3	740 mg/m3	4,500 mg/m3
iron	3.2 mg/m3	35 mg/m3	150 mg/m3

Ingredient	Original IDLH	Revised IDLH
bisphenol F diglycidyl ether copolymer (Confidential CAS#)	Not Available	Not Available
bisphenol A diglycidyl ether polymer	Not Available	Not Available
silica amorphous	3,000 mg/m3	Not Available
iron	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
bisphenol F diglycidyl ether copolymer (Confidential CAS#)	E	≤ 0.1 ppm
bisphenol A diglycidyl ether polymer	E	≤ 0.1 ppm
Notes:	*Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.*	

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
Personal protection	
Eye and face protection	▸ Safety glasses with side shields. ▸ Chemical goggles.
Skin protection	See Hand protection below
Hands/feet protection	▸ Wear chemical protective gloves, e.g. PVC. ▸ Wear safety footwear or safety gumboots, e.g. Rubber **NOTE:** ▸ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.
Body protection	See Other protection below
Other protection	▸ Overalls. ▸ P.V.C apron.

Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Black Paste		
Physical state	Free-flowing Paste	**Relative density (Agua= 1)**	Not Available

Continued...

Odor	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Available
pH (as supplied)	Not Available	**Decomposition temperature**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	Not Available	**Molecular weight (g/mol)**	Not Available
Flash point (°C)	Not Available		
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Not Available	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not Available	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	Not Available	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	Not Available	**Gas group**	Not Available
Solubility in water	Immiscible	**pH as a solution (1%)**	Not Available
Vapour density (Air = 1)	Not Available	**VOC g/L**	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	Product is considered stable and hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
Ingestion	The material has **NOT** been classified by EC Directives or other classification systems as 'harmful by ingestion'. This is because of the lack of corroborating animal or human evidence.
Skin Contact	This material can cause inflammation of the skin on contact in some persons. The material may accentuate any pre-existing dermatitis condition Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.
Eye	This material can cause eye irritation and damage in some persons.
Chronic	Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Amorphous silicas generally are less hazardous than crystalline silicas, but the former can be converted to the latter on heating and subsequent cooling. Inhalation of dusts containing crystalline silicas may lead to silicosis, a disabling lung disease that may take years to develop. Soluble silicates do not exhibit sensitizing potential. Testing in bacterial and animal experiments have not shown any evidence of them causing mutations or birth defects. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.

High Heat Syringe Part A	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
bisphenol F diglycidyl ether copolymer (Confidential CAS#)	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
bisphenol A diglycidyl ether polymer	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: >17.094 mg/kg[2]	Not Available
	Oral(Mouse) LD50; >500 mg/kg[2]	

Continued...

silica amorphous	

TOXICITY	IRRITATION
dermal (rat) LD50: >2000 mg/kg[1]	Eye (rabbit): non-irritating *
Inhalation(Rat) LC50; >0.139 mg/L4[1]	Eye: no adverse effect observed (not irritating)[1]
Oral(Rat) LD50; >1000 mg/kg[1]	Skin (rabbit): non-irritating *
	Skin: no adverse effect observed (not irritating)[1]

iron	

TOXICITY	IRRITATION
Oral(Human) LD50; 200 mg/kg[2]	Not Available

Legend:	*1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances*

High Heat Syringe Part A	The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type.
SILICA AMORPHOUS	Reports indicate high/prolonged exposures to amorphous silicas induced lung fibrosis in experimental animals; in some experiments these effects were reversible. [PATTYS] The substance is classified by IARC as Group 3: **NOT** classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.
High Heat Syringe Part A & SILICA AMORPHOUS	For silica amorphous: Derived No Adverse Effects Level (NOAEL) in the range of 1000 mg/kg/d. In humans, synthetic amorphous silica (SAS) is essentially non-toxic by mouth, skin or eyes, and by inhalation. Epidemiology studies show little evidence of adverse health effects due to SAS.

Acute Toxicity	✗	**Carcinogenicity**	✗
Skin Irritation/Corrosion	✓	**Reproductivity**	✗
Serious Eye Damage/Irritation	✓	**STOT - Single Exposure**	✗
Respiratory or Skin sensitisation	✓	**STOT - Repeated Exposure**	✗
Mutagenicity	✗	**Aspiration Hazard**	✗

Legend: ✗ *– Data either not available or does not fill the criteria for classification*
✓ *– Data available to make classification*

SECTION 12 Ecological information

Toxicity

High Heat Syringe Part A	

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

bisphenol F diglycidyl ether copolymer (Confidential CAS#)	

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

bisphenol A diglycidyl ether polymer	

Endpoint	Test Duration (hr)	Species	Value	Source
EC50(ECx)	48	Crustacea	~2mg/l	2
EC50	48	Crustacea	~2mg/l	2

silica amorphous	

Endpoint	Test Duration (hr)	Species	Value	Source
EC0(ECx)	24	Crustacea	>=10000mg/l	1
LC50	96	Fish	1033.016mg/l	2
EC50	48	Crustacea	>86mg/l	2
EC50	72	Algae or other aquatic plants	14.1mg/l	2
EC50	96	Algae or other aquatic plants	217.576mg/l	2

iron	

Endpoint	Test Duration (hr)	Species	Value	Source
NOEC(ECx)	48	Algae or other aquatic plants	0.1-4mg/l	4
LC50	96	Fish	0.001mg/L	4
EC50	48	Crustacea	>100mg/l	2
EC50	72	Algae or other aquatic plants	18mg/l	2

Legend:	*Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite*

Continued...

	V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

For Amorphous Silica: Amorphous silica is chemically and biologically inert. It is not biodegradable.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
silica amorphous	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
silica amorphous	LOW (LogKOW = 0.5294)

Mobility in soil

Ingredient	Mobility
silica amorphous	LOW (KOC = 23.74)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	▸ Containers may still present a chemical hazard/ danger when empty. ▸ Recycle wherever possible or consult manufacturer for recycling options. ▸ Consult State Land Waste Management Authority for disposal.

SECTION 14 Transport information

Note:	For inner packagings not over 5L as manufactured and supplied by J-B Weld, the following exceptions apply: DOT - 49CFR §173.155 (b); IMDG - §2.10.2.7; IATA - Special Provision A197 . For non-exempt packagings, the proper shipping name is UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(EPOXY RESIN), 9, PGIII

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
bisphenol F diglycidyl ether copolymer (Confidential CAS#)	Not Available
bisphenol A diglycidyl ether polymer	Not Available
silica amorphous	Not Available
iron	Not Available

Transport in bulk in accordance with the ICG Code

Product name	Ship Type
bisphenol F diglycidyl ether copolymer (Confidential CAS#)	Not Available
bisphenol A diglycidyl ether polymer	Not Available
silica amorphous	Not Available
iron	Not Available

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

bisphenol F diglycidyl ether copolymer (Confidential CAS#) is found on the following regulatory lists

Not Applicable

bisphenol A diglycidyl ether polymer is found on the following regulatory lists

Continued...

Chemical Footprint Project - Chemicals of High Concern List	US EPCRA Section 313 Chemical List
US - California Hazardous Air Pollutants Identified as Toxic Air Contaminants	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US Clean Air Act - Hazardous Air Pollutants	US TSCA Chemical Substance Inventory - Interim List of Active Substances
US DOE Temporary Emergency Exposure Limits (TEELs)	

silica amorphous is found on the following regulatory lists

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs	US OSHA Permissible Exposure Limits (PELs) Table Z-3
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US DOE Temporary Emergency Exposure Limits (TEELs)	US TSCA Chemical Substance Inventory - Interim List of Active Substances
US NIOSH Recommended Exposure Limits (RELs)	

iron is found on the following regulatory lists

US AIHA Workplace Environmental Exposure Levels (WEELs)	US OSHA Permissible Exposure Limits (PELs) Table Z-3
US DOE Temporary Emergency Exposure Limits (TEELs)	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US NIOSH Recommended Exposure Limits (RELs)	US TSCA Chemical Substance Inventory - Interim List of Active Substances
US OSHA Permissible Exposure Limits (PELs) Table Z-1	

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

Flammable (Gases, Aerosols, Liquids, or Solids)	No
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	No
Acute toxicity (any route of exposure)	No
Reproductive toxicity	No
Skin Corrosion or Irritation	Yes
Respiratory or Skin Sensitization	Yes
Serious eye damage or eye irritation	Yes
Specific target organ toxicity (single or repeated exposure)	No
Aspiration Hazard	No
Germ cell mutagenicity	No
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

None Reported

State Regulations

US. California Proposition 65

None Reported

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (bisphenol A diglycidyl ether polymer; iron)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (iron)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes

Continued...

National Inventory	Status
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (bisphenol A diglycidyl ether polymer)
Vietnam - NCI	Yes
Russia - FBEPH	Yes
Legend:	*Yes = All CAS declared ingredients are on the inventory* *No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)*

SECTION 16 Other information

Revision Date	03/29/2021
Initial Date	03/29/2021

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

High Heat Syringe
J-B Weld Company LLC

Version No: **5.11**
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **04/12/2021**
Print Date: **04/12/2021**
S.GHS.USA.EN

SECTION 1 Identification

Product Identifier

Product name	High Heat Syringe
Synonyms	50197 (High Heat Syringe) Part B (B-52)
Proper shipping name	Amines, liquid, corrosive, n.o.s. or Polyamines, liquid, corrosive, n.o.s. (contains tetraethylenepentamine and triethylenetetramine)
Other means of identification	Not Available

Recommended use of the chemical and restrictions on use

Relevant identified uses	Amine hardener for epoxy resins

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	**J-B Weld Company LLC**
Address	400 CMH Road Sulphur Springs TX 75482 United States
Telephone	903-885-7696
Fax	Not Available
Website	WWW.JBWeld.com
Email	info@JBWeld.com

Emergency phone number

Association / Organisation	**InfoTrac**
Emergency telephone numbers	Transportation Emergencies: 800-535-5053 or (24 hours)
Other emergency telephone numbers	Poison Control Centers: Medical Emergencies 800-222-1222 (24 hours)

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

Classification	Chronic Aquatic Hazard Category 2, Serious Eye Damage/Eye Irritation Category 1, Acute Toxicity (Oral) Category 4, Reproductive Toxicity Category 1B, Skin Sensitizer Category 1, Skin Corrosion/Irritation Category 1A

Label elements

Hazard pictogram(s)	
Signal word	**Danger**

Hazard statement(s)

H411	Toxic to aquatic life with long lasting effects.
H302	Harmful if swallowed.
H360	May damage fertility or the unborn child.
H317	May cause an allergic skin reaction.
H314	Causes severe skin burns and eye damage.

Hazard(s) not otherwise classified

Not Applicable

Supplementary statement(s)

Page 1 continued...

Not Applicable

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P260	Do not breathe mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P281	Use personal protective equipment as required.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P272	Contaminated work clothing should not be allowed out of the workplace.

Precautionary statement(s) Response

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P310	Immediately call a POISON CENTER or doctor/physician.
P363	Wash contaminated clothing before reuse.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P391	Collect spillage.
P301+P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Precautionary statement(s) Storage

P405	Store locked up.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
68410-23-1	50-75	C18 fatty acid dimers/ polyethylenepolyamine polyamides
112-24-3*	1-5	triethylenetetramine
71074-89-0*	0.1-0.99	bis[(dimethylamino)methyl]phenol
90-72-2*	5-10	2,4,6-tris[(dimethylamino)methyl]phenol
67762-90-7	1-5	silica amorphous
3033-62-3*	0.1-0.99	bis(2-dimethylaminoethyl)ether
7439-89-6	1-5	iron
13463-67-7*	1-5	titanium dioxide
112-57-2	1-5	tetraethylenepentamine
80-05-7	1-5	bisphenol A
68953-36-6*	20-25	tall oil/ tetraethylenepentamine polyamides

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 First-aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▸ Immediately hold eyelids apart and flush the eye continuously with running water. ▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▸ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▸ Transport to hospital or doctor without delay. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. For amines: ▸ If liquid amines come in contact with the eyes, irrigate immediately and continuously with low pressure flowing water, preferably from an eye wash fountain, for 15 to 30 minutes. ▸ For more effective flushing of the eyes, use the fingers to spread apart and hold open the eyelids. The eyes should then be “rolled” or moved

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	in all directions. ▸ Seek immediate medical attention, preferably from an ophthalmologist.
Skin Contact	If skin or hair contact occurs: ▸ Immediately flush body and clothes with large amounts of water, using safety shower if available. ▸ Quickly remove all contaminated clothing, including footwear. ▸ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. ▸ Transport to hospital, or doctor. For amines: ▸ In case of major exposure to liquid amine, promptly remove any contaminated clothing, including rings, watches, and shoe, preferably under a safety shower. ▸ Wash skin for 15 to 30 minutes with plenty of water and soap. Call a physician immediately. ▸ Remove and dry-clean or launder clothing soaked or soiled with this material before reuse. Dry cleaning of contaminated clothing may be more effective than normal laundering. ▸ Inform individuals responsible for cleaning of potential hazards associated with handling contaminated clothing. ▸ Discard contaminated leather articles such as shoes, belts, and watchbands. ▸ Note to Physician: Treat any skin burns as thermal burns. After decontamination, consider the use of cold packs and topical antibiotics.
Inhalation	▸ If fumes or combustion products are inhaled remove from contaminated area. ▸ Lay patient down. Keep warm and rested. ▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▸ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▸ Transport to hospital, or doctor, without delay. ▸ Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema. ▸ Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs). ▸ As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested. ▸ Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered. **This must definitely be left to a doctor or person authorised by him/her.** (ICSC13719) For amines: ▸ All employees working in areas where contact with amine catalysts is possible should be thoroughly trained in the administration of appropriate first aid procedures. ▸ Experience has demonstrated that prompt administration of such aid can minimize the effects of accidental exposure. ▸ Promptly move the affected person away from the contaminated area to an area of fresh air. ▸ Keep the affected person calm and warm, but not hot. ▸ If breathing is difficult, oxygen may be administered by a qualified person. ▸ If breathing stops, give artificial respiration. Call a physician at once.
Ingestion	▸ For advice, contact a Poisons Information Centre or a doctor at once. ▸ Urgent hospital treatment is likely to be needed. ▸ If swallowed do **NOT** induce vomiting. ▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▸ Observe the patient carefully. ▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▸ Transport to hospital or doctor without delay. For amines: ▸ If liquid amine are ingested, have the affected person drink several glasses of water or milk. ▸ Do not induce vomiting. ▸ Immediately transport to a medical facility and inform medical personnel about the nature of the exposure. The decision of whether to induce vomiting should be made by an attending physician.

Most important symptoms and effects, both acute and delayed

See Section 11

Treat symptomatically.

SECTION 5 Fire-fighting measures

Extinguishing media

▸ Foam.
▸ Dry chemical powder.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Special protective equipment and precautions for fire-fighters

Fire Fighting	▸ When silica dust is dispersed in air, firefighters should wear inhalation protection as hazardous substances from the fire may be adsorbed on the silica particles. ▸ When heated to extreme temperatures, (>1700 deg.C) amorphous silica can fuse. ▸ Alert Fire Department and tell them location and nature of hazard. ▸ Wear full body protective clothing with breathing apparatus.
Fire/Explosion Hazard	▸ When silica dust is dispersed in air, firefighters should wear inhalation protection as hazardous substances from the fire may be adsorbed on the silica particles. ▸ When heated to extreme temperatures, (>1700 deg.C) amorphous silica can fuse. ▸ Combustible. ▸ Slight fire hazard when exposed to heat or flame.

Continued...

	Combustion products include: carbon dioxide (CO_2) nitrogen oxides (NOx) silicon dioxide (SiO_2) metal oxides other pyrolysis products typical of burning organic material. May emit corrosive fumes.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	▸ Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material. ▸ Check regularly for spills and leaks. ▸ Clean up all spills immediately. ▸ Avoid breathing vapours and contact with skin and eyes. for amines: ▸ If possible (i.e., without risk of contact or exposure), stop the leak. ▸ Contain the spilled material by diking, then neutralize.
Major Spills	▸ Clear area of personnel and move upwind. ▸ Alert Fire Brigade and tell them location and nature of hazard. For amines: ▸ First remove all ignition sources from the spill area. ▸ Have firefighting equipment nearby, and have firefighting personnel fully trained in the proper use of the equipment and in the procedures used in fighting a chemical fire.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs. ▸ **DO NOT** allow clothing wet with material to stay in contact with skin
Other information	▸ Store in original containers. ▸ Keep containers securely sealed. ▸ **DO NOT** store near acids, or oxidising agents ▸ No smoking, naked lights, heat or ignition sources.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ **DO NOT** use aluminium, galvanised or tin-plated containers ▸ Lined metal can, lined metal pail/ can. ▸ Plastic pail. For low viscosity materials ▸ Drums and jerricans must be of the non-removable head type. ▸ Where a can is to be used as an inner package, the can must have a screwed enclosure.
Storage incompatibility	·Quaternary ammonium cations are unreactive toward even strong electrophiles, oxidants, and acids. They also are stable toward most nucleophiles. ▸ Avoid strong acids, bases. ·Imidazole may be regarded as possessing pyrrole and pyridine like properties and therefore its reactivity might resemble that of the others. In general imidazole, in common with pyrazole, is less reactive than pyrrole and more reactive than benzene. The substance may be or contains a 'metalloid' The following elements are considered to be metalloids; boron,silicon, germanium, arsenic, antimony, tellurium and (possibly) polonium The electronegativities and ionisation energies of the metalloids are between those of the metals and nonmetals, so the metalloids exhibit characteristics of both classes. The reactivity of the metalloids depends on the element with which they are reacting. Silicas: ▸ react with hydrofluoric acid to produce silicon tetrafluoride gas ▸ react with xenon hexafluoride to produce explosive xenon trioxide ▸ reacts exothermically with oxygen difluoride, and explosively with chlorine trifluoride (these halogenated materials are not commonplace industrial materials) and other fluorine-containing compounds ▸ may react with fluorine, chlorates ▸ are incompatible with strong oxidisers, manganese trioxide, chlorine trioxide, strong alkalis, metal oxides, concentrated orthophosphoric acid, vinyl acetate ▸ may react vigorously when heated with alkali carbonates. ▸ Avoid contact with copper, aluminium and their alloys. ▸ Avoid reaction with oxidising agents Amines are incompatible with: ·isocyanates, halogenated organics, peroxides, phenols (acidic), epoxides, anhydrides, and acid halides. ·strong reducing agents such as hydrides, due to the liberation of flammable gas.

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SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
C18 fatty acid dimers/ polyethylenepolyamine polyamides	30 mg/m3	330 mg/m3	2,000 mg/m3
triethylenetetramine	3 ppm	14 ppm	83 ppm
2,4,6-tris[(dimethylamino)methyl]phenol	6.5 mg/m3	72 mg/m3	430 mg/m3
silica amorphous	18 mg/m3	200 mg/m3	1,200 mg/m3
silica amorphous	18 mg/m3	100 mg/m3	630 mg/m3
silica amorphous	120 mg/m3	1,300 mg/m3	7,900 mg/m3
silica amorphous	45 mg/m3	500 mg/m3	3,000 mg/m3
silica amorphous	18 mg/m3	740 mg/m3	4,500 mg/m3
bis(2-dimethylaminoethyl)ether	0.15 ppm	1.4 ppm	8.4 ppm
iron	3.2 mg/m3	35 mg/m3	150 mg/m3
titanium dioxide	30 mg/m3	330 mg/m3	2,000 mg/m3
tetraethylenepentamine	15 mg/m3	130 mg/m3	790 mg/m3
bisphenol A	15 mg/m3	110 mg/m3	650 mg/m3

Ingredient	Original IDLH	Revised IDLH
C18 fatty acid dimers/ polyethylenepolyamine polyamides	Not Available	Not Available
triethylenetetramine	Not Available	Not Available
bis[(dimethylamino)methyl]phenol	Not Available	Not Available
2,4,6-tris[(dimethylamino)methyl]phenol	Not Available	Not Available
silica amorphous	3,000 mg/m3	Not Available
bis(2-dimethylaminoethyl)ether	Not Available	Not Available
iron	Not Available	Not Available
titanium dioxide	5,000 mg/m3	Not Available
tetraethylenepentamine	Not Available	Not Available
bisphenol A	Not Available	Not Available
tall oil/ tetraethylenepentamine polyamides	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
C18 fatty acid dimers/ polyethylenepolyamine polyamides	E	≤ 0.1 ppm
triethylenetetramine	E	≤ 0.1 ppm
bis(2-dimethylaminoethyl)ether	E	≤ 0.1 ppm
titanium dioxide	E	≤ 0.01 mg/m³
tetraethylenepentamine	D	> 0.1 to ≤ 1 ppm
bisphenol A	E	≤ 0.01 mg/m³
tall oil/ tetraethylenepentamine polyamides	E	≤ 0.1 ppm
Notes:	*Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.*	

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

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Personal protection	
Eye and face protection	‣ Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure. ‣ Chemical goggles.whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted. For amines: SPECIAL PRECAUTION: ‣ Because amines are alkaline materials that can cause rapid and severe tissue damage, wearing of contact lenses while working with amines is strongly discouraged. Wearing such lenses can prolong contact of the eye tissue with the amine, thereby causing more severe damage.
Skin protection	See Hand protection below
Hands/feet protection	‣ Elbow length PVC gloves ‣ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots. **NOTE:** ‣ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. When handling liquid-grade epoxy resins wear chemically protective gloves , boots and aprons. The performance, based on breakthrough times ,of: ·Ethyl Vinyl Alcohol (EVAL laminate) is generally excellent ·Butyl Rubber ranges from excellent to good ·Nitrile Butyl Rubber (NBR) from excellent to fair. For amines: ‣ Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly.
Body protection	See Other protection below
Other protection	‣ Overalls. ‣ PVC Apron.

Respiratory protection

Type AK-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

Where engineering controls are not feasible and work practices do not reduce airborne amine concentrations below recommended exposure limits, appropriate respiratory protection should be used. In such cases, air-purifying respirators equipped with cartridges designed to protect against amines are recommended.

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Liquid.

Physical state	Liquid	**Relative density (Water= 1)**	Not Available
Odor	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Available
pH (as supplied)	Not Available	**Decomposition temperature**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	Not Available	**Molecular weight (g/mol)**	Not Available
Flash point (°C)	Not Available		
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Not Available	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not Available	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	Not Available	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	Not Available	**Gas group**	Not Available
Solubility in water	Immiscible	**pH as a solution (1%)**	Not Available
Vapour density (Air = 1)	Not Available	**VOC g/L**	Not Available

SECTION 10 Stability and reactivity

Continued...

Reactivity	See section 7
Chemical stability	▸ Unstable in the presence of incompatible materials. ▸ Product is considered stable.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhaling corrosive bases may irritate the respiratory tract. Symptoms include cough, choking, pain and damage to the mucous membrane. Inhalation of amine vapours may cause irritation of the mucous membrane of the nose and throat, and lung irritation with respiratory distress and cough. Swelling and inflammation of the respiratory tract is seen in serious cases; with headache, nausea, faintness and anxiety. Inhalation of epoxy resin amine hardeners (including polyamines and amine adducts) may produce bronchospasm and coughing episodes lasting several days after cessation of the exposure. Even faint traces of these vapours may trigger an intense reaction in individuals showing 'amine asthma'. inhalation of vapour from the curing material
Ingestion	Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. Ingestion of alkaline corrosives may produce burns around the mouth, ulcerations and swellings of the mucous membranes, profuse saliva production, with an inability to speak or swallow. Both the oesophagus and stomach may experience burning pain; vomiting and diarrhoea may follow. Ingestion of amine epoxy-curing agents (hardeners) may cause severe abdominal pain, nausea, vomiting or diarrhoea. The vomitus may contain blood and mucous. Amines without benzene rings when swallowed are absorbed throughout the gut. Corrosive action may cause damage throughout the gastrointestinal tract.
Skin Contact	Volatile amine vapours produce irritation and inflammation of the skin. Direct contact can cause burns. Cationic surfactants cause skin irritation, and, in high concentrations, caustic burns. Amine epoxy-curing agents (hardeners) may produce primary skin irritation and sensitisation dermatitis in predisposed individuals. Cutaneous reactions include erythema, intolerable itching and severe facial swelling. Skin contact with alkaline corrosives may produce severe pain and burns; brownish stains may develop. The corroded area may be soft, gelatinous and necrotic; tissue destruction may be deep. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. This material can cause inflammation of the skin on contact in some persons.
Eye	If applied to the eyes, this material causes severe eye damage. Direct eye contact with corrosive bases can cause pain and burns. There may be swelling, epithelium destruction, clouding of the cornea and inflammation of the iris. Vapours of volatile amines irritate the eyes, causing excessive secretion of tears, inflammation of the conjunctiva and slight swelling of the cornea, resulting in 'halos' around lights. This effect is temporary, lasting only for a few hours. Many cationic surfactants are very irritating to the eyes at low concentration. Concentrated solutions can cause severe burns with permanent clouding.
Chronic	Studies show that inhaling this substance for over a long period (e.g. in an occupational setting) may increase the risk of cancer. Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Ample evidence exists that developmental disorders are directly caused by human exposure to the material. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Imidazole is structurally related, and has been used to counteract the effects of histamine. Imidazoles have been reported to disrupt male fertility, through disruption of the function of the testes. Bisphenol A may have effects similar to female sex hormones and when administered to pregnant women, may damage the foetus. It may also damage male reproductive organs and sperm. Amorphous silicas generally are less hazardous than crystalline silicas, but the former can be converted to the latter on heating and subsequent cooling. Inhalation of dusts containing crystalline silicas may lead to silicosis, a disabling lung disease that may take years to develop. Soluble silicates do not exhibit sensitizing potential. Testing in bacterial and animal experiments have not shown any evidence of them causing mutations or birth defects. Prolonged or repeated skin contact may cause degreasing, followed by drying, cracking and skin inflammation. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. Amine epoxy-curing agents (hardeners) may produce primary skin irritation and sensitisation dermatitis in predisposed individuals. Cutaneous reactions include erythema, intolerable itching and severe facial swelling.

High Heat Syringe	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
C18 fatty acid dimers/ polyethylenepolyamine polyamides	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >2000 mg/kg[1]	Not Available
	Oral(Rat) LD50; >2000 mg/kg[1]	

Continued...

triethylenetetramine

TOXICITY	IRRITATION
Dermal (rabbit) LD50: 550 mg/kg[2]	Not Available
Oral(Mouse) LD50; 38.5 mg/kg[2]	

bis[(dimethylamino)methyl]phenol

TOXICITY	IRRITATION
Not Available	Not Available

2,4,6-tris[(dimethylamino)methyl]phenol

TOXICITY	IRRITATION
dermal (rat) LD50: >1.028 mg/kg[1]	Eye: adverse effect observed (irreversible damage)[1]
Oral(Rat) LD50; 2169 mg/kg[1]	Skin: adverse effect observed (corrosive)[1]

silica amorphous

TOXICITY	IRRITATION
dermal (rat) LD50: >2000 mg/kg[1]	Eye (rabbit): non-irritating *
Inhalation(Rat) LC50; >0.139 mg/L4h[1]	Eye: no adverse effect observed (not irritating)[1]
Oral(Rat) LD50; >1000 mg/kg[1]	Skin (rabbit): non-irritating *
	Skin: no adverse effect observed (not irritating)[1]

bis(2-dimethylaminoethyl)ether

TOXICITY	IRRITATION
Dermal (rabbit) LD50: 750 mg/kg[1]	Not Available
Inhalation(Rat) LC50; >2.204 mg/l4h[1]	
Oral(Rat) LD50; 571 mg/kg[1]	

iron

TOXICITY	IRRITATION
Oral(Human) LD50; 200 mg/kg[2]	Not Available

titanium dioxide

TOXICITY	IRRITATION
Inhalation (Rat)TCLo: 0.04 mg/kg[2]	Eye: no adverse effect observed (not irritating)[1]
Oral (Mouse)LD50; >10000 mg/kg *[2]	Skin (human): 0.3 mg /3D (int)-mild *
Oral (Mouse)TDLo: 0.0032 mg/kg[2]	Skin: no adverse effect observed (not irritating)[1]
Oral (Rat)LD50; >20000 mg/kg *[2]	
Oral (Rat)TDLo: 60000 mg/kg[2]	

tetraethylenepentamine

TOXICITY	IRRITATION
Dermal (rabbit) LD50: 660 mg/kg[2]	Eye (rabbit): 100 mg/24h moderate
Oral(Rat) LD50; 2100 mg/kg[2]	Eye (rabbit): 5 mg moderate
	Skin (rabbit): 495 mg SEVERE
	Skin (rabbit): 5 mg/24h SEVERE

bisphenol A

TOXICITY	IRRITATION
Dermal (rabbit) LD50: 2.5 mg/kg[2]	Eye (rabbit): 0.25 mg/24h-SEVERE
Oral(Mouse) LD50; 150 mg/kg[2]	Eye: adverse effect observed (irritating)[1]
	Skin (rabbit): 250 mg open - mild
	Skin (rabbit): 500 mg/24h - mild
	Skin: adverse effect observed (irritating)[1]
	Skin: no adverse effect observed (not irritating)[1]

tall oil/ tetraethylenepentamine polyamides

TOXICITY	IRRITATION
Oral(Rat) LD50; >5000 mg/kg[2]	Eyes (rabbit) (-) moderate
	Skin (rabbit) (-) moderate

Legend: *1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances*

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High Heat Syringe	The various members of the bisphenol family produce hormone like effects, seemingly as a result of binding to estrogen receptor-related receptors (ERRs; not to be confused with estrogen receptors) A suspected estrogen-related receptors (ERR) binding agent: Estrogen-related receptors (ERR, oestrogen-related receptors) are so named because of sequence homology with estrogen receptors but do not appear to bind estrogens or other tested steroid hormones. The ERR family have been demonstrated to control energy homeostasis, oxidative metabolism and mitochondrial biogenesis ,while effecting mammalian physiology in the heart, brown adipose tissue, white adipose tissue, placenta, macrophages, and demonstrated additional roles in diabetes and cancer. ERRs bind enhancers throughout the genome where they exert effects on gene regulation Although their overall functions remain uncertain, they also share DNA-binding sites, co-regulators, and target genes with the conventional estrogen receptors ERalpha and ERbeta and may function to modulate estrogen signaling pathways. · ERR-alpha has wide tissue distribution but it is most highly expressed in tissues that preferentially use fatty acids as energy sources such as kidney, heart, brown adipose tissue, cerebellum, intestine, and skeletal muscle. ERRalpha has been detected in normal adrenal cortex tissues, in which its expression is possibly related to adrenal development, with a possible role in fetal adrenal function, in dehydroepiandrosterone (DHEAS) production in adrenarche, and also in steroid production of post-adrenarche/adult life.
C18 FATTY ACID DIMERS/ POLYETHYLENEPOLYAMINE POLYAMIDES	Considered to be a skin sensitiser in the Local Lymph Node Assay (LLNA) conducted according to OECD Test Guideline 429. The substance does not cause effects that meet the criteria for classification for systemic or target organ toxicity after repeated sub-acute exposures. Based on read-across to these findings, Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines does not meet the criteria for classification for repeated dose toxicity according to Regulation 1272/2008/EC or Directive 67/548/EEC. Genetic toxicity Negative results were obtained in an in vitro study conducted using bacterial cells. Negative results were obtained for the read across substance in vitro studies in mammalian cells. *REACh Dossier
SILICA AMORPHOUS	Reports indicate high/prolonged exposures to amorphous silicas induced lung fibrosis in experimental animals; in some experiments these effects were reversible. [PATTYS] The substance is classified by IARC as Group 3: **NOT** classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.
titanium dioxide	* IUCLID Laboratory (in vitro) and animal studies show, exposure to the material may result in a possible risk of irreversible effects, with the possibility of producing mutation. Exposure to titanium dioxide is via inhalation, swallowing or skin contact. When inhaled, it may deposit in lung tissue and lymph nodes causing dysfunction of the lungs and immune system. Absorption by the stomach and intestines depends on the size of the particle. No significant acute toxicological data identified in literature search. **WARNING:** This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.
TETRAETHYLENEPENTAMINE	The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration. Triethylenetetramine is a severe irritant to skin and eyes and may induce skin sensitisation. Acute exposure to saturated vapour via inhalation was tolerated without impairment but exposure to aerosol may lead to reversible irritations of the mucous membranes in the airways.
BISPHENOL A	For bisphenol A (BPA) Following oral administration absorption of BPA is rapid and extensive while dermal absorption is limited. Extensive first pass metabolism occurs following absorption from the gastrointestinal tract with glucuronide conjugation being the major metabolic pathway.
tall oil/ tetraethylenepentamine polyamides	Overexposure to most of these materials may cause adverse health effects. Many amine-based compounds can cause release of histamines, which, in turn, can trigger allergic and other physiological effects, including constriction of the bronchi or asthma and inflammation of the cavity of the nose. Whole-body symptoms include headache, nausea, faintness, anxiety, a decrease in blood pressure, rapid heartbeat, itching, reddening of the skin, urticaria (hives) and swelling of the face, which are usually transient. There are generally four routes of possible or potential exposure: inhalation, skin contact, eye contact, and swallowing. Inhalation: Inhaling vapours may result in moderate to severe irritation of the tissues of the nose and throat and can irritate the lungs. Most undiluted cationic surfactants satisfy the criteria for classification as Harmful (Xn) with R22 and as Irritant (Xi) for skin and eyes with R38 and R41.
High Heat Syringe & C18 FATTY ACID DIMERS/ POLYETHYLENEPOLYAMINE POLYAMIDES & titanium dioxide & TETRAETHYLENEPENTAMINE & BISPHENOL A & tall oil/ tetraethylenepentamine polyamides	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound.
High Heat Syringe & C18 FATTY ACID DIMERS/ POLYETHYLENEPOLYAMINE POLYAMIDES & TETRAETHYLENEPENTAMINE & BISPHENOL A & tall oil/ tetraethylenepentamine polyamides	The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type.
High Heat Syringe & C18 FATTY ACID DIMERS/ POLYETHYLENEPOLYAMINE POLYAMIDES & tall oil/ tetraethylenepentamine polyamides	Laboratory testing shows that the fatty acid amide, cocoamide DEA, causes occupational allergic contact dermatitis, and that allergy to this substance is becoming more common. Alkanolamides are manufactured by condensation of diethanolamine and the methyl ester of long chain fatty acids. For imidazoline surfactants (amidoamine/ imidazoline - AAIs) All substances within the AAI group show the same reactive groups, show similar composition of amide, imidazoline, and some dimer structures of both, with the length of original EA amines used for production as biggest difference. Inherent reactivity and toxicity is not expected to differ much between these substances. All in vivo skin irritation/corrosion studies performed on AAI substances all indicate them to be corrosive following 4 hour exposure. For quaternary ammonium compounds (QACs): Quaternary ammonium compounds are synthetically made surfactants. Studies show that its solubility, toxicity and irritation depend on chain length and bond type while effect on histamine depends on concentration. The chemicals in the Fatty Nitrogen Derived (FND) Amides are generally similar in terms of physical and chemical properties, environmental fate and toxicity. Its low acute oral toxicity is well established across all subcategories by the available data and show no apparent organ specific toxicity, mutation, reproductive or developmental defects.
High Heat Syringe & C18 FATTY ACID DIMERS/ POLYETHYLENEPOLYAMINE	Ethyleneamines are very reactive and can cause chemical burns, skin rashes and asthma-like symptoms. It is readily absorbed through the skin and may cause eye blindness and irreparable damage.

Continued...

POLYAMIDES & TETRAETHYLENEPENTAMINE & tall oil/ tetraethylenepentamine polyamides	
High Heat Syringe & SILICA AMORPHOUS	For silica amorphous: Derived No Adverse Effects Level (NOAEL) in the range of 1000 mg/kg/d. In humans, synthetic amorphous silica (SAS) is essentially non-toxic by mouth, skin or eyes, and by inhalation. Epidemiology studies show little evidence of adverse health effects due to SAS.
High Heat Syringe & BISPHENOL A	The chemical structure of hydroxylated diphenylalkanes or bisphenols consists of two phenolic rings joined together through a bridging carbon. This class of endocrine disruptors that mimic oestrogens is widely used in industry, particularly in plastics. Bisphenol A (BPA) and some related compounds exhibit oestrogenic activity in human breast cancer cell line MCF-7, but there were remarkable differences in activity.
C18 FATTY ACID DIMERS/ POLYETHYLENEPOLYAMINE POLYAMIDES & titanium dioxide & TETRAETHYLENEPENTAMINE & tall oil/ tetraethylenepentamine polyamides	The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
titanium dioxide & BISPHENOL A	The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.
TETRAETHYLENEPENTAMINE & tall oil/ tetraethylenepentamine polyamides	For alkyl polyamines: The alkyl polyamines cluster consists of two terminal primary and at least one secondary amine groups and are derivatives of low molecular weight ethylenediamine, propylenediamine or hexanediamine. Toxicity depends on route of exposure. Tetraethylenepentamine (TEPA) has a low acute toxicity when taken orally and a higher toxicity via the dermal route most likely due to the corrosive nature of TEPA to the skin against neutralization by stomach acid. TEPA may be corrosive to the skin and eyes.

Acute Toxicity	✔	**Carcinogenicity**	✘
Skin Irritation/Corrosion	✔	**Reproductivity**	✔
Serious Eye Damage/Irritation	✔	**STOT - Single Exposure**	✘
Respiratory or Skin sensitisation	✔	**STOT - Repeated Exposure**	✘
Mutagenicity	✘	**Aspiration Hazard**	✘

Legend: ✘ *– Data either not available or does not fill the criteria for classification*
✔ *– Data available to make classification*

SECTION 12 Ecological information

Toxicity

High Heat Syringe

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

C18 fatty acid dimers/ polyethylenepolyamine polyamides

Endpoint	Test Duration (hr)	Species	Value	Source
LC50	96	Fish	7.07mg/l	2
EC50	48	Crustacea	5.18mg/l	2
NOEC(ECx)	72	Algae or other aquatic plants	1.25mg/l	2
EC50	72	Algae or other aquatic plants	4.11mg/l	2

triethylenetetramine

Endpoint	Test Duration (hr)	Species	Value	Source
ErC50	72	Algae or other aquatic plants	2.5mg/l	1
EC50	48	Crustacea	31.1mg/l	1
LC50	96	Fish	180mg/l	1
BCF	1008	Fish	<0.5	7
EC50	72	Algae or other aquatic plants	2.5mg/l	1
EC10(ECx)	72	Algae or other aquatic plants	0.67mg/l	1

bis[(dimethylamino)methyl]phenol

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

2,4,6-tris[(dimethylamino)methyl]phenol

Endpoint	Test Duration (hr)	Species	Value	Source
EC50(ECx)	72	Algae or other aquatic plants	2.8mg/l	2
LC50	96	Fish	175mg/l	2
EC50	72	Algae or other aquatic plants	2.8mg/l	2

Continued...

silica amorphous

Endpoint	Test Duration (hr)	Species	Value	Source
EC0(ECx)	24	Crustacea	>=10000mg/l	1
LC50	96	Fish	1033.016mg/l	2
EC50	48	Crustacea	>86mg/l	2
EC50	72	Algae or other aquatic plants	14.1mg/l	2
EC50	96	Algae or other aquatic plants	217.576mg/l	2

bis(2-dimethylaminoethyl)ether

Endpoint	Test Duration (hr)	Species	Value	Source
NOEC(ECx)	72	Algae or other aquatic plants	0.26mg/l	2
EC50	48	Crustacea	102mg/l	2
LC50	96	Fish	~131.2mg/l	2
EC50	72	Algae or other aquatic plants	4mg/l	2

iron

Endpoint	Test Duration (hr)	Species	Value	Source
NOEC(ECx)	48	Algae or other aquatic plants	0.1-4mg/l	4
LC50	96	Fish	0.001mg/L	4
EC50	48	Crustacea	>100mg/l	2
EC50	72	Algae or other aquatic plants	18mg/l	2

titanium dioxide

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	48	Crustacea	1.9mg/l	2
BCF	1008	Fish	<1.1-9.6	7
LC50	96	Fish	1.85-3.06mg/l	4
EC50	72	Algae or other aquatic plants	3.75-7.58mg/l	4
NOEC(ECx)	48	Crustacea	0.003mg/L	4
EC50	96	Algae or other aquatic plants	179.05mg/l	2

tetraethylenepentamine

Endpoint	Test Duration (hr)	Species	Value	Source
NOEC(ECx)	72	Algae or other aquatic plants	0.5mg/l	1
EC50	48	Crustacea	24.1mg/l	1
EC50	72	Algae or other aquatic plants	2.1mg/l	1

bisphenol A

Endpoint	Test Duration (hr)	Species	Value	Source
ErC50	72	Algae or other aquatic plants	2.7-3.1mg/l	1
BCF	1008	Fish	5.1-13.3	7
NOEC(ECx)	96	Crustacea	0.51mg/l	1
LC50	96	Fish	0.141-0.185mg/L	4
EC50	48	Crustacea	10.2mg/l	1
EC50	72	Algae or other aquatic plants	1.25-1.89mg/l	4
EC50	96	Algae or other aquatic plants	1mg/l	1

tall oil/ tetraethylenepentamine polyamides

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

Legend: *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.
On the basis of available evidence concerning either toxicity, persistence, potential to accumulate and or observed environmental fate and behaviour, the material may present a danger, immediate or long-term and /or delayed, to the structure and/ or functioning of natural ecosystems.
Prevent, by any means available, spillage from entering drains or water courses.
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
triethylenetetramine	LOW	LOW
2,4,6-tris[(dimethylamino)methyl]phenol	HIGH	HIGH

Continued...

Ingredient	Persistence: Water/Soil	Persistence: Air
silica amorphous	LOW	LOW
bis(2-dimethylaminoethyl)ether	HIGH	HIGH
titanium dioxide	HIGH	HIGH
tetraethylenepentamine	LOW	LOW
bisphenol A	HIGH (Half-life = 360 days)	LOW (Half-life = 0.31 days)

Bioaccumulative potential

Ingredient	Bioaccumulation
triethylenetetramine	LOW (BCF = 5)
2,4,6-tris[(dimethylamino)methyl]phenol	LOW (LogKOW = 0.773)
silica amorphous	LOW (LogKOW = 0.5294)
bis(2-dimethylaminoethyl)ether	LOW (LogKOW = -0.5386)
titanium dioxide	LOW (BCF = 10)
tetraethylenepentamine	LOW (LogKOW = -3.1604)
bisphenol A	LOW (BCF = 100)

Mobility in soil

Ingredient	Mobility
triethylenetetramine	LOW (KOC = 309.9)
2,4,6-tris[(dimethylamino)methyl]phenol	LOW (KOC = 15130)
silica amorphous	LOW (KOC = 23.74)
bis(2-dimethylaminoethyl)ether	LOW (KOC = 21.85)
titanium dioxide	LOW (KOC = 23.74)
tetraethylenepentamine	LOW (KOC = 1098)
bisphenol A	LOW (KOC = 75190)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	▸ Containers may still present a chemical hazard/ danger when empty. ▸ Return to supplier for reuse/ recycling if possible. Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. ▸ **DO NOT** allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. Removal of bisphenol A (BPA) from aqueous solutions was accomplished by adsorption of enzymatically generated quinone derivatives on chitosan beads. The use of chitosan in the form of beads was found to be more effective because heterogeneous removal of BPA with chitosan beads was much faster than homogeneous removal of BPA with chitosan solutions, and the removal efficiency was enhanced by increasing the amount of chitosan beads dispersed in the BPA solutions and BPA was completely removed by quinone adsorption in the presence of chitosan beads more than 0.10 cm3/cm3. ▸ Recycle wherever possible. ▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.

SECTION 14 Transport information

Labels Required

Land transport (DOT)

UN number	2735
UN proper shipping name	Amines, liquid, corrosive, n.o.s. or Polyamines, liquid, corrosive, n.o.s. (contains tetraethylenepentamine and triethylenetetramine)
Transport hazard class(es)	Class: 8 Subrisk: Not Applicable
Packing group	III
Environmental hazard	Environmentally hazardous

Continued...

Special precautions for user	Hazard Label	8
	Special provisions	IB3, T7, TP1, TP28

Air transport (ICAO-IATA / DGR)

UN number	2735	
UN proper shipping name	Amines, liquid, corrosive, n.o.s. * (contains tetraethylenepentamine and triethylenetetramine)	
Transport hazard class(es)	ICAO/IATA Class	8
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	8L
Packing group	III	
Environmental hazard	Environmentally hazardous	
Special precautions for user	Special provisions	A3 A803
	Cargo Only Packing Instructions	856
	Cargo Only Maximum Qty / Pack	60 L
	Passenger and Cargo Packing Instructions	852
	Passenger and Cargo Maximum Qty / Pack	5 L
	Passenger and Cargo Limited Quantity Packing Instructions	Y841
	Passenger and Cargo Limited Maximum Qty / Pack	1 L

Sea transport (IMDG-Code / GGVSee)

UN number	2735	
UN proper shipping name	AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (contains tetraethylenepentamine and triethylenetetramine)	
Transport hazard class(es)	IMDG Class	8
	IMDG Subrisk	Not Applicable
Packing group	III	
Environmental hazard	Marine Pollutant	
Special precautions for user	EMS Number	F-A , S-B
	Special provisions	223 274
	Limited Quantities	5 L

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
C18 fatty acid dimers/ polyethylenepolyamine polyamides	Not Available
triethylenetetramine	Not Available
bis[(dimethylamino)methyl]phenol	Not Available
2,4,6-tris[(dimethylamino)methyl]phenol	Not Available
silica amorphous	Not Available
bis(2-dimethylaminoethyl)ether	Not Available
iron	Not Available
titanium dioxide	Not Available
tetraethylenepentamine	Not Available
bisphenol A	Not Available
tall oil/ tetraethylenepentamine polyamides	Not Available

Transport in bulk in accordance with the ICG Code

Product name	Ship Type
C18 fatty acid dimers/ polyethylenepolyamine polyamides	Not Available
triethylenetetramine	Not Available
bis[(dimethylamino)methyl]phenol	Not Available

Continued...

Product name	Ship Type
2,4,6-tris[(dimethylamino)methyl]phenol	Not Available
silica amorphous	Not Available
bis(2-dimethylaminoethyl)ether	Not Available
iron	Not Available
titanium dioxide	Not Available
tetraethylenepentamine	Not Available
bisphenol A	Not Available
tall oil/ tetraethylenepentamine polyamides	Not Available

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

C18 fatty acid dimers/ polyethylenepolyamine polyamides is found on the following regulatory lists

US DOE Temporary Emergency Exposure Limits (TEELs)
US TSCA Chemical Substance Inventory - Interim List of Active Substances
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

triethylenetetramine is found on the following regulatory lists

US DOE Temporary Emergency Exposure Limits (TEELs)
US Toxicology Excellence for Risk Assessment (TERA) Workplace Environmental Exposure Levels (WEEL)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US TSCA Chemical Substance Inventory - Interim List of Active Substances

bis[(dimethylamino)methyl]phenol is found on the following regulatory lists

Not Applicable

2,4,6-tris[(dimethylamino)methyl]phenol is found on the following regulatory lists

US DOE Temporary Emergency Exposure Limits (TEELs)
US TSCA Chemical Substance Inventory - Interim List of Active Substances
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

silica amorphous is found on the following regulatory lists

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
US OSHA Permissible Exposure Limits (PELs) Table Z-3
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
US TSCA Chemical Substance Inventory - Interim List of Active Substances
US DOE Temporary Emergency Exposure Limits (TEELs)
US NIOSH Recommended Exposure Limits (RELs)

bis(2-dimethylaminoethyl)ether is found on the following regulatory lists

US ACGIH Threshold Limit Values (TLV)
US NIOSH Recommended Exposure Limits (RELs)
US AIHA Workplace Environmental Exposure Levels (WEELs)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US DOE Temporary Emergency Exposure Limits (TEELs)
US TSCA Chemical Substance Inventory - Interim List of Active Substances

iron is found on the following regulatory lists

US AIHA Workplace Environmental Exposure Levels (WEELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-3
US DOE Temporary Emergency Exposure Limits (TEELs)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US NIOSH Recommended Exposure Limits (RELs)
US TSCA Chemical Substance Inventory - Interim List of Active Substances
US OSHA Permissible Exposure Limits (PELs) Table Z-1

titanium dioxide is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
US ACGIH Threshold Limit Values (TLV) - Notice of Intended Changes
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
US AIHA Workplace Environmental Exposure Levels (WEELs)
US DOE Temporary Emergency Exposure Limits (TEELs)
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans
US List of Active Substances Exempt from the TSCA Inventory Notifications (Active-Inactive) Rule
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US - California Proposition 65 - Carcinogens
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List
US TSCA Chemical Substance Inventory - Interim List of Active Substances
US ACGIH Threshold Limit Values (TLV)
US ACGIH Threshold Limit Values (TLV) - Carcinogens

tetraethylenepentamine is found on the following regulatory lists

US DOE Temporary Emergency Exposure Limits (TEELs)
US Toxicology Excellence for Risk Assessment (TERA) Workplace Environmental Exposure Levels (WEEL)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US TSCA Chemical Substance Inventory - Interim List of Active Substances

bisphenol A is found on the following regulatory lists

Continued...

Chemical Footprint Project - Chemicals of High Concern List	US EPA Integrated Risk Information System (IRIS)
US - California Proposition 65 - Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity	US EPCRA Section 313 Chemical List
US - California Proposition 65 - Reproductive Toxicity	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List	US TSCA Chemical Substance Inventory - Interim List of Active Substances
US DOE Temporary Emergency Exposure Limits (TEELs)	US TSCA Section 4/12 (b) - Sunset Dates/Status

tall oil/ tetraethylenepentamine polyamides is found on the following regulatory lists

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory	US TSCA Chemical Substance Inventory - Interim List of Active Substances

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

Flammable (Gases, Aerosols, Liquids, or Solids)	No
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	No
Acute toxicity (any route of exposure)	Yes
Reproductive toxicity	Yes
Skin Corrosion or Irritation	Yes
Respiratory or Skin Sensitization	Yes
Serious eye damage or eye irritation	Yes
Specific target organ toxicity (single or repeated exposure)	No
Aspiration Hazard	No
Germ cell mutagenicity	No
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

None Reported

State Regulations

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm

US - California Proposition 65 - Carcinogens: Listed substance

titanium dioxide Listed

US - California Proposition 65 - Reproductive Toxicity: Listed substance

bisphenol A Listed

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	No (bis[(dimethylamino)methyl]phenol)
Canada - DSL	No (bis[(dimethylamino)methyl]phenol)
Canada - NDSL	No (C18 fatty acid dimers/ polyethylenepolyamine polyamides; triethylenetetramine; bis[(dimethylamino)methyl]phenol; 2,4,6-tris[(dimethylamino)methyl]phenol; bis(2-dimethylaminoethyl)ether; iron; titanium dioxide; tetraethylenepentamine; bisphenol A; tall oil/ tetraethylenepentamine polyamides)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	No (C18 fatty acid dimers/ polyethylenepolyamine polyamides)
Japan - ENCS	No (iron; tall oil/ tetraethylenepentamine polyamides)
Korea - KECI	No (bis[(dimethylamino)methyl]phenol)
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes

Continued...

National Inventory	Status
USA - TSCA	No (bis[(dimethylamino)methyl]phenol)
Taiwan - TCSI	Yes
Mexico - INSQ	No (bis[(dimethylamino)methyl]phenol; bis(2-dimethylaminoethyl)ether; tall oil/ tetraethylenepentamine polyamides)
Vietnam - NCI	Yes
Russia - FBEPH	No (C18 fatty acid dimers/ polyethylenepolyamine polyamides; bis[(dimethylamino)methyl]phenol)
Legend:	*Yes = All CAS declared ingredients are on the inventory* *No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)*

SECTION 16 Other information

Revision Date	04/12/2021
Initial Date	03/28/2021

SDS Version Summary

Version	Issue Date	Sections Updated
4.11.1.1.1	04/11/2021	Ingredients

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

end of SDS