Steel Reinforced Epoxy Resin - Twin Tube - Part A

JRP Distribution Ltd

Version No: **6.10**
Safety data sheet according to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758

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SECTION 1 Identification of the substance / mixture and of the company / undertaking

1.1. Product Identifier

Product name	Steel Reinforced Epoxy Resin - Twin Tube - Part A
Synonyms	8265 (J-B Weld Original), 8265S, 8265H, 8280, 8281 (J-B Weld Original Twin Tubes); 8272 (MarineWeld); 8276, 8270, 8271 (J-B Kwik), 8276H (J-B Kwik) Part A
Other means of identification	UFI:9KVQ-J0DH-A00P-8TM9

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Use according to manufacturer's directions.
Uses advised against	No specific uses advised against are identified.

1.3. Details of the manufacturer or supplier of the safety data sheet

Registered company name	**JRP Distribution Ltd**	**J-B Weld Company**
Address	Unit 10A, Business Park, City Fields Way Tangmere PO20 2FT United Kingdom	44994 Lower Roswell Road Suite 9 Atlanta Georgia United States
Telephone	+44 1903 750355	903-885-7696
Fax	Not Available	Not Available
Website	www.jbweld.com	www.jbweld.com
Email	info@jbweld.com	info@jbweld.com

1.4. Emergency telephone number

Association / Organisation	**Department of Health & Social Care (DHSC)**	**InfoTrac**
Emergency telephone numbers	**112**	**+1 (800) 535-5053**
Other emergency telephone numbers	**Not Available**	**+1 (800) 222-1222**

SECTION 2 Hazards identification

2.1. Classification of the substance or mixture

Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567 [1]	H315 - Skin Corrosion/Irritation Category 2, H317 - Sensitisation (Skin) Category 1A, H319 - Serious Eye Damage/Eye Irritation Category 2, H411 - Hazardous to the Aquatic Environment Long-Term Hazard Category 2
Legend:	*1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567*

2.2. Label elements

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

Hazard statement(s)

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H411	Toxic to aquatic life with long lasting effects.

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Supplementary statement(s)

Not Applicable

Precautionary statement(s) Prevention

P280	Wear protective gloves, protective clothing, eye protection and face protection.
P261	Avoid breathing mist/vapours/spray.
P273	Avoid release to the environment.
P264	Wash all exposed external body areas thoroughly after handling.
P272	Contaminated work clothing should not be allowed out of the workplace.

Precautionary statement(s) Response

P308+P313	IF exposed or concerned: Get medical advice/ attention.
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.
P312	Call a POISON CENTER/doctor/...if you feel unwell.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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.

2.3. Other hazards

glass, oxide	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)

SECTION 3 Composition / information on ingredients

3.1.Substances

See 'Composition on ingredients' in Section 3.2

3.2.Mixtures

1. CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567	SCL / M-Factor	Nanoform Particle Characteristics
1. 25068-38-6* 2.500-033-5 3.603-074-00-8 4.Not Available	26.5	bisphenol A diglycidyl ether polymer	Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3 , Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2, Sensitisation (Skin) Category 1B; H335, H315, H319, H317 [1]	Eye Irrit. 2; H319: C ≥ 5 % | Skin Irrit 2; H315: C ≥ 5 %	Not Available
1. 9003-36-5* 2.500-006-8 3.Not Available 4.Not Available	4.65	bisphenol F diglycidyl ether copolymer	Skin Corrosion/Irritation Category 2, Sensitisation (Skin) Category 1A; H315, H317 [1]	Not Available	Not Available
1. 2530-83-8* 2.219-784-2 3.Not Available 4.Not Available	0.75	gamma-glycidoxypropyltrimethoxysilane	Serious Eye Damage/Eye Irritation Category 1; H318 [1]	Not Available	Not Available
1. 1333-86-4 2.422-130-0|435-640-3|215-609-9 3.Not Available 4.Not Available	0.1	carbon black	Not Classified [3]	Not Available	Not Available
1. 1318-59-8* 2.215-285-9 3.Not Available 4.Not Available	0.16	Chlorite	Not Applicable	Not Available	Not Available
1. 16389-88-1* 2.240-440-2 3.Not Available 4.Not Available	0.16	Dolomite	Not Applicable	Not Available	Not Available
1. 546-93-0* 2.208-915-9 3.Not Available 4.Not Available	0.16	Magnesite	Not Applicable	Not Available	Not Available
1. 14807-96-6* 2.238-877-9 3.Not Available	7.66	Talc	Not Applicable	Not Available	Not Available

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1. CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567	SCL / M-Factor	Nanoform Particle Characteristics
4.Not Available					
1. 1317-65-3* 2.215-279-6 3.Not Available 4.Not Available	41.12	Limestone	Not Applicable	Not Available	Not Available
1. 14808-60-7* 2.238-878-4 3.Not Available 4.Not Available	0.41	Quartz	Specific Target Organ Toxicity - Single Exposure Category 1, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3 , Carcinogenicity Category 1A, Specific Target Organ Toxicity - Repeated Exposure Category 1; H370, H335, H350, H372 [1]	Not Available	Not Available
1. 7732-18-5 2.231-791-2 3.Not Available 4.Not Available	0.42	water	Not Classified [3]	Not Available	Not Available
1. 2425-79-8* 2.219-371-7 3.603-072-00-7 4.Not Available	3.85	1,4-butanediol diglycidyl ether	Acute Toxicity (Inhalation) Category 4, Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2, Sensitisation (Skin) Category 1; H332, H302, H315, H319, H317 [1]	Not Available	Not Available
1. 7631-86-9 2.231-545-4 3.Not Available 4.Not Available	0.35	silica amorphous	Specific Target Organ Toxicity - Repeated Exposure Category 1; H372, EUH210 [3]	Not Available	Not Available
1. 65997-17-3 2.266-046-0 3.Not Available 4.Not Available	2	glass, oxide	Not Classified [3]	Not Available	Not Available
1. 7439-89-6 2.231-096-4 3.Not Available 4.Not Available	11	iron	Not Classified [3]	Not Available	Not Available
Legend:	*1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties*				

SECTION 4 First aid measures

4.1. 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.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Firefighting measures

5.1. Extinguishing media

Metal dust fires need to be smothered with sand, inert dry powders.
DO NOT USE WATER, CO2 or FOAM.

- Use DRY sand, graphite powder, dry sodium chloride based extinguishers, G-1 or Met L-X to smother fire.
- **DO NOT** use halogenated fire extinguishing agents.

5.2. Special hazards arising from the substrate or mixture

Continued...

Fire Incompatibility	‣ Reacts with acids producing flammable / explosive hydrogen (H2) gas

5.3. Advice for firefighters

Fire Fighting	‣ Alert Fire Brigade and tell them location and nature of hazard. ‣ Wear breathing apparatus plus protective gloves in the event of a fire. ‣ Prevent, by any means available, spillage from entering drains or water courses. ‣ 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.
Fire/Explosion Hazard	‣ **DO NOT** disturb burning dust. Explosion may result if dust is stirred into a cloud, by providing oxygen to a large surface of hot metal. ‣ **DO NOT** use water or foam as generation of explosive hydrogen may result. ‣ 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. Decomposition may produce toxic fumes of: silicon dioxide (SiO2) metal oxides May emit corrosive fumes.

SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

See section 8

6.2. Environmental precautions

See section 12

6.3. Methods and material for containment and cleaning up

Minor Spills	Environmental hazard - contain spillage. ‣ Clean up all spills immediately. ‣ Avoid contact with skin and eyes. ‣ Wear impervious gloves and safety goggles.
Major Spills	Environmental hazard - contain spillage. Minor hazard. ‣ Clear area of personnel. ‣ Alert Fire Brigade and tell them location and nature of hazard.

6.4. Reference to other sections

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

SECTION 7 Handling and storage

7.1. Precautions for safe handling

Safe handling	‣ Avoid all personal contact, including inhalation. ‣ Wear protective clothing when risk of exposure occurs. ‣ Use in a well-ventilated area.
Fire and explosion protection	See section 5
Other information	‣ Store in original containers. ‣ Keep containers securely sealed. ‣ Store in a cool, dry, well-ventilated area.

7.2. Conditions for safe storage, including any incompatibilities

Suitable container	‣ Polyethylene or polypropylene container. ‣ Packing as recommended by manufacturer. ‣ Check all containers are clearly labelled and free from leaks.
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. For example, boron acts as a nonmetal when reacting with sodium yet as a metal when reacting with fluorine. ‣ Many metals may incandesce, react violently, ignite or react explosively upon addition of concentrated nitric acid. 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.

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	Metals exhibit varying degrees of activity. Reaction is reduced in the massive form (sheet, rod, or drop), compared with finely divided forms. The less active metals will not burn in air but: ▸ can react exothermically with oxidising acids to form noxious gases. ▸ Finely divided metal powders develop pyrophoricity when a critical specific surface area is exceeded; this is ascribed to high heat of oxide formation on exposure to air. ▸ Safe handling is possible in relatively low concentrations of oxygen in an inert gas. ▸ Several pyrophoric metals, stored in glass bottles have ignited when the container is broken on impact. ▸ Many metals in elemental form react exothermically with compounds having active hydrogen atoms (such as acids and water) to form flammable hydrogen gas and caustic products. ▸ Elemental metals may react with azo/diazo compounds to form explosive products. ▸ Some elemental metals form explosive products with halogenated hydrocarbons.
Hazard categories in accordance with Regulation (EC) No 1272/2008	E2: Hazardous to the Aquatic Environment in Category Chronic 2
Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of	E2 Lower- / Upper-tier requirements: 200 / 500

7.3. Specific end use(s)

See section 1.2

SECTION 8 Exposure controls / personal protection

8.1. Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
bisphenol F diglycidyl ether copolymer	Dermal 104.15 mg/kg bw/day (Systemic, Chronic) Inhalation 29.39 mg/m³ (Systemic, Chronic) *Dermal 62.5 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 8.7 mg/m³ (Systemic, Chronic) ** *Oral 6.25 mg/kg bw/day (Systemic, Chronic) **	Not Available
gamma-glycidoxypropyltrimethoxysilane	Dermal 10 mg/kg bw/day (Systemic, Chronic) Inhalation 70.5 mg/m³ (Systemic, Chronic) *Dermal 5 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 17 mg/m³ (Systemic, Chronic) ** *Oral 5 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 26 400 mg/m³ (Systemic, Acute) **	0.45 mg/L (Water (Fresh)) 0.45 mg/L (Water - Intermittent release) 0.045 mg/L (Water (Marine)) 1.6 mg/kg sediment dw (Sediment (Fresh Water)) 0.16 mg/kg sediment dw (Sediment (Marine)) 0.063 mg/kg soil dw (Soil) 8.2 mg/L (STP)
carbon black	Inhalation 1 mg/m³ (Systemic, Chronic) *Inhalation 0.06 mg/m³ (Systemic, Chronic) **	50 mg/L (Water (Fresh))
Magnesite	Inhalation 6.2 mg/m³ (Local, Chronic) *Oral 7.23 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 0.94 mg/m³ (Local, Chronic) ** *Oral 7.23 mg/kg bw/day (Systemic, Acute) ** *Inhalation 8.63 mg/m³ (Local, Acute) **	Not Available
Talc	Dermal 43.2 mg/kg bw/day (Systemic, Chronic) Inhalation 2.16 mg/m³ (Systemic, Chronic) Dermal 4.54 mg/cm² (Local, Chronic) Inhalation 3.6 mg/m³ (Local, Chronic) Inhalation 2.16 mg/m³ (Systemic, Acute) Inhalation 3.6 mg/m³ (Local, Acute) *Dermal 21.6 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 1.08 mg/m³ (Systemic, Chronic) ** *Oral 160 mg/kg bw/day (Systemic, Chronic) ** *Dermal 2.27 mg/cm² (Local, Chronic) ** *Inhalation 1.8 mg/m³ (Local, Chronic) ** *Inhalation 1.08 mg/m³ (Systemic, Acute) ** *Oral 160 mg/kg bw/day (Systemic, Acute) ** *Inhalation 1.8 mg/m³ (Local, Acute) **	597.97 mg/L (Water (Fresh)) 597.97 mg/L (Water - Intermittent release) 141.26 mg/L (Water (Marine)) 31.33 mg/kg sediment dw (Sediment (Fresh Water)) 3.13 mg/kg sediment dw (Sediment (Marine))
Limestone	Inhalation 1 mg/m³ (Local, Chronic) Inhalation 4 mg/m³ (Local, Acute) *Inhalation 4 mg/m³ (Local, Acute) **	Not Available
Quartz	Inhalation 40 µg/m³ (Local, Chronic) *Oral 0.03 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 8 µg/m³ (Local, Chronic) **	Not Available
water	Dermal 0.02 mg/kg bw/day (Systemic, Chronic) Inhalation 0.12 mg/m³ (Systemic, Chronic) Inhalation 0.11 mg/m³ (Local, Chronic) Dermal 5 mg/kg bw/day (Systemic, Acute) Inhalation 2.5 mg/m³ (Systemic, Acute) Inhalation 0.33 mg/m³ (Local, Acute) *Dermal 0.35 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 0.144 mg/m³ (Systemic, Chronic) ** *Oral 0.08 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 0.03 mg/m³ (Local, Chronic) ** *Dermal 2.5 mg/kg bw/day (Systemic, Acute) ** *Inhalation 1.96 mg/m³ (Systemic, Acute) ** *Oral 2.5 mg/kg bw/day (Systemic, Acute) ** *Inhalation 0.09 mg/m³ (Local, Acute) **	Not Available

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Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
1,4-butanediol diglycidyl ether	Dermal 6.66 mg/kg bw/day (Systemic, Chronic) Inhalation 4.7 mg/m³ (Systemic, Chronic) *Dermal 3.33 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 1.16 mg/m³ (Systemic, Chronic) ** *Oral 0.33 mg/kg bw/day (Systemic, Chronic) **	0.024 mg/L (Water (Fresh)) 0.24 mg/L (Water - Intermittent release) 0.002 mg/L (Water (Marine)) 0.084 mg/kg sediment dw (Sediment (Fresh Water)) 0.008 mg/kg sediment dw (Sediment (Marine)) 0.003 mg/kg soil dw (Soil) 100 mg/L (STP) 0.028 mg/kg food (Oral)
silica amorphous	Inhalation 0.3 mg/m³ (Local, Chronic) Inhalation 15 mg/m³ (Local, Acute) *Oral 3.29 mg/kg bw/day (Systemic, Chronic) **	Not Available
iron	Inhalation 3 mg/m³ (Local, Chronic) *Oral 0.71 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 1.5 mg/m³ (Local, Chronic) **	Not Available

* Values for General Population

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
UK Workplace Exposure Limits (WELs).	carbon black	Carbon black	3.5 mg/m3	7 mg/m3	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	Magnesite	Magnesite: inhalable dust	10 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	Magnesite	Magnesite: respirable dust	4 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	Talc	Talc, respirable dust	1 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	Limestone	Marble: respirable	4 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	Limestone	Limestone: respirable	4 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	Limestone	Limestone: total inhalable	10 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	Limestone	Calcium carbonate: respirable	4 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	Limestone	Calcium carbonate: inhalable dust	10 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	Limestone	Marble: total inhalable	10 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	Quartz	Silica, respirable crystalline (respirable fraction)	0.1 mg/m3	Not Available	Not Available	Carc (where generated as a result of a work process)
UK Workplace Exposure Limits (WELs).	silica amorphous	Silica, fused respirable dust	0.08 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	silica amorphous	Diatomaceous earth, natural, respirable dust	1.2 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	iron	Iron salts (as Fe)	1 mg/m3	2 mg/m3	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
bisphenol A diglycidyl ether polymer	90 mg/m3	990 mg/m3	5,900 mg/m3
gamma-glycidoxypropyltrimethoxysilane	9.3 mg/m3	100 mg/m3	230 mg/m3
carbon black	9 mg/m3	99 mg/m3	590 mg/m3
Magnesite	45 mg/m3	260 mg/m3	1,600 mg/m3
Quartz	0.075 mg/m3	33 mg/m3	200 mg/m3
1,4-butanediol diglycidyl ether	16 mg/m3	170 mg/m3	220 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
glass, oxide	15 mg/m3	170 mg/m3	990 mg/m3
iron	3.2 mg/m3	35 mg/m3	150 mg/m3

Ingredient	Original IDLH	Revised IDLH
bisphenol A diglycidyl ether	Not Available	Not Available

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Ingredient	Original IDLH	Revised IDLH
polymer		
bisphenol F diglycidyl ether copolymer	Not Available	Not Available
gamma-glycidoxypropyltrimethoxysilane	Not Available	Not Available
carbon black	1,750 mg/m3	Not Available
Chlorite	Not Available	Not Available
Dolomite	Not Available	Not Available
Magnesite	Not Available	Not Available
Talc	1,000 mg/m3	Not Available
Limestone	Not Available	Not Available
Quartz	25 mg/m3 / 50 mg/m3	Not Available
water	Not Available	Not Available
1,4-butanediol diglycidyl ether	Not Available	Not Available
silica amorphous	3,000 mg/m3	Not Available
glass, oxide	Not Available	Not Available
iron	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
bisphenol A diglycidyl ether polymer	E	≤ 0.1 ppm
bisphenol F diglycidyl ether copolymer	E	≤ 0.1 ppm
1,4-butanediol diglycidyl ether	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.*	

8.2. Exposure controls

8.2.1. Appropriate engineering controls	Metal dusts must be collected at the source of generation as they are potentially explosive. ▸ Avoid ignition sources. ▸ Good housekeeping practices must be maintained.
8.2.2. Individual protection measures, such as personal protective equipment	
Eye and face protection	▸ Safety glasses with side shields. ▸ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent] ▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.
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. ▸ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.
Body protection	See Other protection below
Other protection	▸ Overalls. ▸ P.V.C apron. ▸ Barrier cream.

Respiratory protection

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

8.2.3. Environmental exposure controls

See section 12

SECTION 9 Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Black Paste

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Physical state	Free-flowing Paste	**Relative density (Water = 1)**	1.5-2.0
Odour	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 (°C)**	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
Nanoform Solubility	Not Available	**Nanoform Particle Characteristics**	Not Available
Particle Size	Not Available		

9.2. Other information

Not Available

SECTION 10 Stability and reactivity

10.1.Reactivity	See section 7.2
10.2. Chemical stability	▸ Unstable in the presence of incompatible materials. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
10.3. Possibility of hazardous reactions	See section 7.2
10.4. Conditions to avoid	See section 7.2
10.5. Incompatible materials	See section 7.2
10.6. Hazardous decomposition products	See section 5.3

SECTION 11 Toxicological information

11.1. 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. Not normally a hazard due to non-volatile nature of product
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. Irritation and skin reactions are possible with sensitive skin
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.

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Steel Reinforced Epoxy Resin - Twin Tube - Part A

TOXICITY	IRRITATION
Not Available	Not Available

bisphenol A diglycidyl ether polymer

TOXICITY	IRRITATION
dermal (rat) LD50: >1200 mg/kg[2]	Not Available
Oral (Mouse) LD50; >500 mg/kg[2]	

bisphenol F diglycidyl ether copolymer

TOXICITY	IRRITATION
dermal (rat) LD50: >400 mg/kg[2]	Eye: no adverse effect observed (not irritating)[1]
Oral (Rat) LD50: >5000 mg/kg[2]	Skin: adverse effect observed (irritating)[1]

gamma-glycidoxypropyltrimethoxysilane

TOXICITY	IRRITATION
Dermal (rabbit) LD50: 4247.9 mg/kg[2]	Not Available
Inhalation(Rat) LC50: >5.3 mg/l4h[1]	
Oral (Rat) LD50: 7010 mg/kg[2]	

carbon black

TOXICITY	IRRITATION
Dermal (rabbit) LD50: >2000 mg/kg[1]	Eye: no adverse effect observed (not irritating)[1]
Oral (Rat) LD50: >2000 mg/kg[1]	Skin: no adverse effect observed (not irritating)[1]

Chlorite

TOXICITY	IRRITATION
Not Available	Not Available

Dolomite

TOXICITY	IRRITATION
Not Available	Not Available

Magnesite

TOXICITY	IRRITATION
Oral (Rat) LD50: >2000 mg/kg[1]	Not Available

Talc

TOXICITY	IRRITATION
dermal (rat) LD50: >2000 mg/kg[1]	Eye: no adverse effect observed (not irritating)[1]
Inhalation(Rat) LC50: >2.1 mg/l4h[1]	Skin: no adverse effect observed (not irritating)[1]
Oral (Rat) LD50: >5000 mg/kg[1]	

Limestone

TOXICITY	IRRITATION
Oral (Rat) LD50: 6450 mg/kg[2]	Not Available

Quartz

TOXICITY	IRRITATION
Oral (Rat) LD50: 500 mg/kg[2]	Not Available

water

TOXICITY	IRRITATION
Oral (Rat) LD50: >90000 mg/kg[2]	Not Available

1,4-butanediol diglycidyl ether

TOXICITY	IRRITATION
Dermal (rabbit) LD50: 1130 mg/kg[2]	Not Available
Oral (Rat) LD50: 1118 mg/kg[1]	

silica amorphous

TOXICITY	IRRITATION
dermal (rat) LD50: >2000 mg/kg[1]	Eye (rabbit): non-irritating ** [Grace]
Inhalation(Rat) LC50: >0.09<0.84 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]

Continued...

glass, oxide	**TOXICITY** / **IRRITATION** Not Available / Not Available
iron	**TOXICITY** / **IRRITATION** Oral (Rat) LD50: 98600 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*

Steel Reinforced Epoxy Resin - Twin Tube - 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.
CARBON BLACK	Inhalation (rat) TCLo: 50 mg/m3/6h/90D-I Nil reported **WARNING:** This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.
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.
GLASS, OXIDE	A similar spherical glass powder was nontoxic to rats at 5,000 mg/kg. All animals survived, gained weight and appeared active and healthy. There were no signs of gross toxicity, adverse pharmacologic effects or abnormal behavior. There are no known reports of subchronic toxicity of nonfibrous glass. There are no known reports of carcinogenicity of nonfibrous glass When tested for primary irritation potential, a similar material caused minimal irritation to eyes and was non-irritating to skin. Dust in excess of recommended exposure limits may result in irritation to the respiratory tract
Steel Reinforced Epoxy Resin - Twin Tube - 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. Repeated exposure (without personal protection) may cause mechanical irritation of the eye and drying/cracking of the skin. When experimental animals inhale synthetic amorphous silica (SAS) dust, it dissolves in the lung fluid and is rapidly eliminated.
CARBON BLACK & WATER & GLASS, OXIDE	No significant acute toxicological data identified in literature search.

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*

11.2 Information on other hazards

11.2.1. Endocrine disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.

11.2.2. Other information

See Section 11.1

SECTION 12 Ecological information

12.1. Toxicity

Steel Reinforced Epoxy Resin - Twin Tube - Part A	**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	48h	Crustacea	~2mg/l	2
	EC50(ECx)	24h	Crustacea	3mg/l	Not Available
	LC50	96h	Fish	2.4mg/l	Not Available
bisphenol F diglycidyl ether copolymer	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	Not Available	Not Available	Not Available	Not Available	Not Available

Continued...

gamma-glycidoxypropyltrimethoxysilane

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	>420mg/l	2
EC50	48h	Crustacea	473mg/l	2
EC50	96h	Algae or other aquatic plants	250mg/l	2
NOEC(ECx)	96h	Fish	1.5mg/l	2
LC50	96h	Fish	4.9mg/l	2

carbon black

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	>0.2mg/l	2
EC50	48h	Crustacea	33.076-41.968mg/l	4
LC50	96h	Fish	>100mg/l	2
NOEC(ECx)	24h	Crustacea	3200mg/l	1

Chlorite

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

Dolomite

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

Magnesite

Endpoint	Test Duration (hr)	Species	Value	Source
LC50	96h	Fish	2120mg/l	2
EC50	72h	Algae or other aquatic plants	>18.5mg/l	2
NOEC(ECx)	72h	Algae or other aquatic plants	18.5mg/l	2

Talc

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	96h	Algae or other aquatic plants	7202.7mg/l	2
LC50	96h	Fish	89581.016mg/l	2
NOEC(ECx)	720h	Algae or other aquatic plants	918.089mg/l	2

Limestone

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

Quartz

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

water

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

1,4-butanediol diglycidyl ether

Endpoint	Test Duration (hr)	Species	Value	Source
EC0(ECx)	24h	Crustacea	32mg/l	2
LC50	96h	Fish	24mg/l	2

silica amorphous

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

glass, oxide

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	>1000mg/l	2
LC50	96h	Fish	>1000mg/l	2
NOEC(ECx)	72h	Crustacea	>=1000mg/l	2

Continued...

iron	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	EC50	72h	Algae or other aquatic plants	18mg/l	2
	EC50	48h	Crustacea	>100mg/l	2
	LC50	96h	Fish	0.00499-0.00819mg/l	4
	NOEC(ECx)	48h	Algae or other aquatic plants	0.1-4mg/l	4

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

DO NOT discharge into sewer or waterways.

12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
gamma-glycidoxypropyltrimethoxysilane	HIGH	HIGH
Magnesite	LOW	LOW
water	LOW	LOW
1,4-butanediol diglycidyl ether	HIGH	HIGH
silica amorphous	LOW	LOW

12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
gamma-glycidoxypropyltrimethoxysilane	LOW (LogKOW = -0.9152)
Magnesite	LOW (LogKOW = -0.4605)
1,4-butanediol diglycidyl ether	LOW (LogKOW = -0.1458)
silica amorphous	LOW (LogKOW = 0.5294)

12.4. Mobility in soil

Ingredient	Mobility
gamma-glycidoxypropyltrimethoxysilane	LOW (KOC = 90.22)
Magnesite	HIGH (KOC = 1)
1,4-butanediol diglycidyl ether	LOW (KOC = 10)
silica amorphous	LOW (KOC = 23.74)

12.5. Results of PBT and vPvB assessment

	P	B	T
Relevant available data	Not Available	Not Available	Not Available
PBT	✗	✗	✗
vPvB	✗	✗	✗

PBT Criteria fulfilled?	No
vPvB	No

12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.

12.7. Other adverse effects

No evidence of ozone depleting properties were found in the current literature.

SECTION 13 Disposal considerations

13.1. Waste treatment methods

Product / Packaging disposal	▸ Containers may still present a chemical hazard/ danger when empty. ▸ Return to supplier for reuse/ recycling if possible. Otherwise: ▸ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. ▸ Recycle wherever possible or consult manufacturer for recycling options. ▸ Consult State Land Waste Management Authority for disposal. ▸ Bury residue in an authorised landfill.
Waste treatment options	Not Available
Sewage disposal options	Not Available

Continued...

SECTION 14 Transport information

HAZCHEM	Not Applicable

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

14.1. **UN number or ID number**	Not Applicable
14.2. **UN proper shipping name**	Not Applicable
14.3. **Transport hazard class(es)**	Class: Not Applicable Subsidiary Hazard: Not Applicable
14.4. **Packing group**	Not Applicable
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Hazard identification (Kemler): Not Applicable Classification code: Not Applicable Hazard Label: Not Applicable Special provisions: Not Applicable Limited quantity: Not Applicable Tunnel Restriction Code: Not Applicable

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

14.1. **UN number**	Not Applicable
14.2. **UN proper shipping name**	Not Applicable
14.3. **Transport hazard class(es)**	ICAO/IATA Class: Not Applicable ICAO / IATA Subsidiary Hazard: Not Applicable ERG Code: Not Applicable
14.4. **Packing group**	Not Applicable
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Special provisions: Not Applicable Cargo Only Packing Instructions: Not Applicable Cargo Only Maximum Qty / Pack: Not Applicable Passenger and Cargo Packing Instructions: Not Applicable Passenger and Cargo Maximum Qty / Pack: Not Applicable Passenger and Cargo Limited Quantity Packing Instructions: Not Applicable Passenger and Cargo Limited Maximum Qty / Pack: Not Applicable

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

14.1. **UN number**	Not Applicable
14.2. **UN proper shipping name**	Not Applicable
14.3. **Transport hazard class(es)**	IMDG Class: Not Applicable IMDG Subsidiary Hazard: Not Applicable
14.4. **Packing group**	Not Applicable
14.5 **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	EMS Number: Not Applicable Special provisions: Not Applicable Limited Quantities: Not Applicable

Inland waterways transport (ADN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

14.1. **UN number**	Not Applicable
14.2. **UN proper shipping name**	Not Applicable
14.3. **Transport hazard class(es)**	Not Applicable | Not Applicable
14.4. **Packing group**	Not Applicable
14.5. **Environmental hazard**	Not Applicable

Continued...

14.6. **Special precautions for user**	Classification code	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Equipment required	Not Applicable
	Fire cones number	Not Applicable

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

Not Applicable

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

Product name	Group
bisphenol A diglycidyl ether polymer	Not Available
bisphenol F diglycidyl ether copolymer	Not Available
gamma-glycidoxypropyltrimethoxysilane	Not Available
carbon black	Not Available
Chlorite	Not Available
Dolomite	Not Available
Magnesite	Not Available
Talc	Not Available
Limestone	Not Available
Quartz	Not Available
water	Not Available
1,4-butanediol diglycidyl ether	Not Available
silica amorphous	Not Available
glass, oxide	Not Available
iron	Not Available

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
bisphenol A diglycidyl ether polymer	Not Available
bisphenol F diglycidyl ether copolymer	Not Available
gamma-glycidoxypropyltrimethoxysilane	Not Available
carbon black	Not Available
Chlorite	Not Available
Dolomite	Not Available
Magnesite	Not Available
Talc	Not Available
Limestone	Not Available
Quartz	Not Available
water	Not Available
1,4-butanediol diglycidyl ether	Not Available
silica amorphous	Not Available
glass, oxide	Not Available
iron	Not Available

SECTION 15 Regulatory information

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

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

Chemical Footprint Project - Chemicals of High Concern List
Great Britain GB mandatory classification and labelling list (GB MCL)
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

bisphenol F diglycidyl ether copolymer is found on the following regulatory lists

Not Applicable

gamma-glycidoxypropyltrimethoxysilane is found on the following regulatory lists

Not Applicable

Continued...

carbon black is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
UK Workplace Exposure Limits (WELs).

Chlorite is found on the following regulatory lists

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

Dolomite is found on the following regulatory lists

Not Applicable

Magnesite is found on the following regulatory lists

UK Workplace Exposure Limits (WELs).

Talc is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
UK Workplace Exposure Limits (WELs).

Limestone is found on the following regulatory lists

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
UK Workplace Exposure Limits (WELs).

Quartz is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 1: Carcinogenic to humans
UK Workplace Exposure Limits (WELs).

water is found on the following regulatory lists

Not Applicable

1,4-butanediol diglycidyl ether is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
Great Britain GB mandatory classification and labelling list (GB MCL)

silica amorphous is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
Great Britain GB Biocidal Active Substances
Great Britain GB mandatory classification and labelling (GB MCL) technical reports
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
UK Workplace Exposure Limits (WELs).

glass, oxide is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

iron is found on the following regulatory lists

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
UK Workplace Exposure Limits (WELs).

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

Information according to 2012/18/EU (Seveso III):

Seveso Category	E2

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	No (Chlorite)
Canada - DSL	No (Chlorite; Dolomite; Limestone)
Canada - NDSL	No (bisphenol A diglycidyl ether polymer; bisphenol F diglycidyl ether copolymer; gamma-glycidoxypropyltrimethoxysilane; carbon black; Chlorite; Magnesite; Talc; Quartz; water; 1,4-butanediol diglycidyl ether; glass, oxide; iron)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (Chlorite; Dolomite; Limestone; glass, oxide; iron)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes

Continued...

National Inventory	Status
USA - TSCA	No (Chlorite)
Taiwan - TCSI	Yes
Mexico - INSQ	No (bisphenol A diglycidyl ether polymer; gamma-glycidoxypropyltrimethoxysilane; Chlorite; 1,4-butanediol diglycidyl ether)
Vietnam - NCI	Yes
Russia - FBEPH	No (Chlorite)
Legend:	*Yes = All CAS declared ingredients are on the inventory* *No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.*

SECTION 16 Other information

Revision Date	10/25/2023
Initial Date	02/08/2021

Full text Risk and Hazard codes

H302	Harmful if swallowed.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H350	May cause cancer.
H370	Causes damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.

SDS Version Summary

Version	Date of Update	Sections Updated
5.10	10/24/2023	Toxicological information - Acute Health (inhaled), Toxicological information - Acute Health (skin), Hazards identification - Classification, Exposure controls / personal protection - Engineering Control, Ecological Information - Environmental, Firefighting measures - Fire Fighter (extinguishing media), Firefighting measures - Fire Fighter (fire/explosion hazard), Firefighting measures - Fire Fighter (fire fighting), Firefighting measures - Fire Fighter (fire incompatibility), Composition / information on ingredients - Ingredients, Handling and storage - Storage (storage incompatibility), Identification of the substance / mixture and of the company / undertaking - Synonyms

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. Risks may be determined by reference to Exposures Scenarios.
For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:
EN 166 Personal eye-protection
EN 340 Protective clothing
EN 374 Protective gloves against chemicals and micro-organisms
EN 13832 Footwear protecting against chemicals
EN 133 Respiratory protective devices

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	Classification Procedure
Skin Corrosion/Irritation Category 2, H315	Minimum classification
Sensitisation (Skin) Category 1A, H317	Calculation method
Serious Eye Damage/Eye Irritation Category 2, H319	Minimum classification
Hazardous to the Aquatic Environment Long-Term Hazard Category 2, H411	Expert judgement

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Steel Reinforced Epoxy Hardener - Slow Cure - Twin Tube Part B

JRP Distribution Ltd

Version No: **6.19**
Safety data sheet according to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758

Issue Date: **10/25/2023**
Print Date: **10/25/2023**
S.REACH.GB.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

1.1. Product Identifier

Product name	Steel Reinforced Epoxy Hardener - Slow Cure - Twin Tube Part B
Synonyms	8265 (J-B Weld Original), 8265S, 8265H, 8280, 8281 (J-B Weld Original Twin Tubes); 8272 (MarineWeld); 8276, 8270, 8271 (J-B Kwik), 8276H(J-B Kwik) Part B
Other means of identification	Not Available

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Use according to manufacturer's directions.
Uses advised against	No specific uses advised against are identified.

1.3. Details of the manufacturer or supplier of the safety data sheet

Registered company name	**JRP Distribution Ltd**	**J-B Weld Company**
Address	Unit 10A, Business Park, City Fields Way Tangmere PO20 2FT United Kingdom	44994 Lower Roswell Road Suite 9 Atlanta Georgia United States
Telephone	+44 1903 750355	903-885-7696
Fax	Not Available	Not Available
Website	www.jbweld.com	www.jbweld.com
Email	info@jbweld.com	info@jbweld.com

1.4. Emergency telephone number

Association / Organisation	**Department of Health & Social Care (DHSC)**	**InfoTrac**
Emergency telephone numbers	**112**	**+1 (800) 535-5053**
Other emergency telephone numbers	**Not Available**	**+1 (800) 222-1222**

SECTION 2 Hazards identification

2.1. Classification of the substance or mixture

Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567 [1]	H317 - Sensitisation (Skin) Category 1, H411 - Hazardous to the Aquatic Environment Long-Term Hazard Category 2
Legend:	*1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567*

2.2. Label elements

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

Hazard statement(s)

H317	May cause an allergic skin reaction.
H411	Toxic to aquatic life with long lasting effects.

Supplementary statement(s)

Page 1 continued...

EUH211	Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

Precautionary statement(s) Prevention

P280	Wear protective gloves and protective clothing.
P261	Avoid breathing mist/vapours/spray.
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): Take off immediately all contaminated clothing. Rinse skin with water [or 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/doctor/...
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P363	Wash contaminated clothing before reuse.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.
P301+P312	IF SWALLOWED: Call a POISON CENTER/ doctor/...if you feel unwell.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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.

2.3. Other hazards

Inhalation and/or ingestion may produce health damage*.

glass, oxide	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)

SECTION 3 Composition / information on ingredients

3.1.Substances

See 'Composition on ingredients' in Section 3.2

3.2.Mixtures

1. CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567	SCL / M-Factor	Nanoform Particle Characteristics
1. 100-51-6* 2.202-859-9 3.603-057-00-5 4.Not Available	0.88	benzyl alcohol	Acute Toxicity (Dermal) Category 4, Acute Toxicity (Inhalation) Category 4, Acute Toxicity (Oral) Category 4, Serious Eye Damage/Eye Irritation Category 2, Sensitisation (Skin) Category 1; H312, H332, H302, H319, H317, EUH019 [1]	Not Available	Not Available
1. 135108-88-2* 2.Not Available 3.Not Available 4.Not Available	9.1	formaldehyde/ benzenamine, hydrogenated	Skin Corrosion/Irritation Category 1C, Specific Target Organ Toxicity - Repeated Exposure Category 2, Corrosive to Metals Category 1, Serious Eye Damage/Eye Irritation Category 1, Acute Toxicity (Oral) Category 4; H314, H373, H290, H318, H302 [1]	Not Available	Not Available
1. 112-57-2* 2.203-986-2 3.612-060-00-0 4.Not Available	0.88	tetraethylenepentamine	Skin Corrosion/Irritation Category 1B, Acute Toxicity (Dermal) Category 4, Serious Eye Damage/Eye Irritation Category 1, Acute Toxicity (Oral) Category 4, Sensitisation (Skin) Category 1; H314, H312, H318, H302, H317 [1]	Not Available	Not Available
1. 68953-36-6* 2.273-201-6 3.Not Available 4.Not Available	6.65	tall oil/ tetraethylenepentamine polyamides	Corrosive to Metals Category 1, Serious Eye Damage/Eye Irritation Category 1, Acute Toxicity (Oral) Category 4, Sensitisation (Skin) Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 1, Skin Corrosion/Irritation Category 1A; H290, H318, H302, H317, H410, H314 [1]	Not Available	Not Available
1. 68410-23-1 2.Not Available 3.Not Available 4.Not Available	12.37	C18 fatty acid dimers/ polyethylenepolyamine polyamides	Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2; H315, H319 [3]	Not Available	Not Available

Continued...

1. CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567	SCL / M-Factor	Nanoform Particle Characteristics
1. 112-24-3* 2.203-950-6 3.612-059-00-5 4.Not Available	0.38	triethylenetetramine	Skin Corrosion/Irritation Category 1C, Acute Toxicity (Dermal) Category 4, Serious Eye Damage/Eye Irritation Category 1, Acute Toxicity (Oral) Category 4, Sensitisation (Skin) Category 1; H314, H312, H318, H302, H317 [1]	Not Available	Not Available
1. 1318-59-8* 2.215-285-9 3.Not Available 4.Not Available	0.04	Chlorite	Not Applicable	Not Available	Not Available
1. 16389-88-1* 2.240-440-2 3.Not Available 4.Not Available	0.04	Dolomite	Not Applicable	Not Available	Not Available
1. 546-93-0* 2.208-915-9 3.Not Available 4.Not Available	0.04	Magnesite	Not Applicable	Not Available	Not Available
1. 14807-96-6* 2.238-877-9 3.Not Available 4.Not Available	1.96	Talc	Not Applicable	Not Available	Not Available
1. 71074-89-0* 2.275-162-0 3.Not Available 4.Not Available	0.26	bis[(dimethylamino)methyl]phenol	Serious Eye Damage/Eye Irritation Category 1; H318 [1]	Not Available	Not Available
1. 90-72-2* 2.202-013-9 3.603-069-00-0 4.Not Available	1.48	2,4,6-tris[(dimethylamino)methyl]phenol	Skin Corrosion/Irritation Category 1C, Serious Eye Damage/Eye Irritation Category 1; H314, H318 [1]	Not Available	Not Available
1. 77-99-6 2.201-074-9 3.Not Available 4.Not Available	0.0063	trimethylolpropane	Not Classified [3]	Not Available	Not Available
1. 65997-17-3 2.266-046-0 3.Not Available 4.Not Available	2	glass, oxide	Not Classified [3]	Not Available	Not Available
1. 7631-86-9 2.231-545-4 3.Not Available 4.Not Available	0.3	silica amorphous	Specific Target Organ Toxicity - Repeated Exposure Category 1; H372, EUH210 [3]	Not Available	Not Available
1. 7727-43-7 2.231-784-4 3.Not Available 4.Not Available	25.5	barium sulfate	Not Classified [3]	Not Available	Not Available
1. 12251-27-3 2.Not Available 3.Not Available 4.Not Available	35.71	nepheline	EUH066 [1]	Not Available	Not Available
1. 13463-67-7 2.236-675-5 3.022-006-00-2 4.Not Available	1.4	titanium dioxide	Carcinogenicity Category 2; H351 [2]	Not Available	Not Available
Legend:	*1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties*				

SECTION 4 First aid measures

4.1. Description of first aid measures

Eye Contact	▸ If in eyes, hold eyelids apart and flush the eye continuously with running water. ▸ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▸ 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.

Continued...

Ingestion	▸ 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. ▸ Seek medical advice. If poisoning occurs, contact a doctor or Poisons Information Centre.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Firefighting measures

5.1. Extinguishing media

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).

5.2. 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

5.3. Advice for firefighters

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 Brigade and tell them location and nature of hazard. ▸ Wear breathing apparatus plus protective gloves. ▸ Prevent, by any means available, spillage from entering drains or water courses.
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. Will burn if ignited. Combustion products include: carbon monoxide (CO) carbon dioxide (CO2) nitrogen oxides (NOx) sulfur oxides (SOx) silicon dioxide (SiO2) metal oxides other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes.

SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

See section 8

6.2. Environmental precautions

See section 12

6.3. Methods and material for containment and cleaning up

Minor Spills	▸ Clean up all spills immediately. ▸ Avoid contact with skin and eyes. ▸ Wear impervious gloves and safety goggles.
Major Spills	▸ Clear area of personnel and move upwind. ▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear breathing apparatus plus protective gloves.

6.4. Reference to other sections

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

SECTION 7 Handling and storage

7.1. Precautions for safe handling

Safe handling	▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area.

Continued...

Fire and explosion protection	See section 5
Other information	▸ Store in original containers. ▸ Keep containers securely sealed. ▸ Store in a cool, dry, well-ventilated area.

7.2. Conditions for safe storage, including any incompatibilities

Suitable container	▸ Metal can or drum ▸ Packaging as recommended by manufacturer. ▸ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	Barium sulfate (barytes) ▸ reacts violently with dimethyl sulfoxide, sodium acetylide, finely divided carbon, aluminium, magnesium, zirconium, and possibly other active metals, especially at elevated temperatures ▸ is incompatible with potassium, phosphorus (ignites when primed with nitrate-calcium silicide) · Quaternary ammonium cations are unreactive toward even strong electrophiles, oxidants, and acids. They also are stable toward most nucleophiles. The latter is indicated by the stability of the hydroxide salts such as tetramethylammonium hydroxide and tetrabutylammonium hydroxide. ▸ 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. · One peculiarity of imidazole is the impossibility to distinguish the two nitrogen atoms in solution. 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. For example, boron acts as a nonmetal when reacting with sodium yet as a metal when reacting with fluorine. 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 reaction with oxidising agents
Hazard categories in accordance with Regulation (EC) No 1272/2008	E2: Hazardous to the Aquatic Environment in Category Chronic 2
Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of	E2 Lower- / Upper-tier requirements: 200 / 500

7.3. Specific end use(s)

See section 1.2

SECTION 8 Exposure controls / personal protection

8.1. Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
benzyl alcohol	Dermal 8 mg/kg bw/day (Systemic, Chronic) Inhalation 22 mg/m³ (Systemic, Chronic) Dermal 40 mg/kg bw/day (Systemic, Acute) Inhalation 110 mg/m³ (Systemic, Acute) *Dermal 4 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 5.4 mg/m³ (Systemic, Chronic) ** *Oral 4 mg/kg bw/day (Systemic, Chronic) ** *Dermal 20 mg/kg bw/day (Systemic, Acute) ** *Inhalation 27 mg/m³ (Systemic, Acute) ** *Oral 20 mg/kg bw/day (Systemic, Acute) **	1 mg/L (Water (Fresh)) 2.3 mg/L (Water - Intermittent release) 0.1 mg/L (Water (Marine)) 5.27 mg/kg sediment dw (Sediment (Fresh Water)) 0.527 mg/kg sediment dw (Sediment (Marine)) 0.456 mg/kg soil dw (Soil) 39 mg/L (STP)
formaldehyde/ benzenamine, hydrogenated	Dermal 2 mg/kg bw/day (Systemic, Chronic) Inhalation 0.2 mg/m³ (Systemic, Chronic) Dermal 6 mg/kg bw/day (Systemic, Acute) Inhalation 2 mg/m³ (Systemic, Acute)	0.015 mg/L (Water (Fresh)) 0.15 mg/L (Water - Intermittent release) 0.002 mg/L (Water (Marine)) 15 mg/kg sediment dw (Sediment (Fresh Water)) 1.5 mg/kg sediment dw (Sediment (Marine)) 1.8 mg/kg soil dw (Soil) 1.9 mg/L (STP)
C18 fatty acid dimers/ polyethylenepolyamine polyamides	Dermal 1.1 mg/kg bw/day (Systemic, Chronic) Inhalation 3.9 mg/m³ (Systemic, Chronic) *Dermal 0.56 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 0.97 mg/m³ (Systemic, Chronic) ** *Oral 0.56 mg/kg bw/day (Systemic, Chronic) **	0.004 mg/L (Water (Fresh)) 0.041 mg/L (Water - Intermittent release) 0 mg/L (Water (Marine)) 411.01 mg/kg sediment dw (Sediment (Fresh Water)) 41.1 mg/kg sediment dw (Sediment (Marine)) 82.18 mg/kg soil dw (Soil) 3.14 mg/L (STP)
triethylenetetramine	Dermal 0.57 mg/kg bw/day (Systemic, Chronic) Inhalation 1 mg/m³ (Systemic, Chronic) Dermal 28 µg/cm² (Local, Chronic)	Not Available

Continued...

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
	Inhalation 5 380 mg/m³ (Systemic, Acute) *Dermal 0.25 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 0.29 mg/m³ (Systemic, Chronic) ** *Oral 0.41 mg/kg bw/day (Systemic, Chronic) ** *Dermal 0.43 mg/cm² (Local, Chronic) ** *Dermal 8 mg/kg bw/day (Systemic, Acute) ** *Inhalation 1 600 mg/m³ (Systemic, Acute) ** *Oral 20 mg/kg bw/day (Systemic, Acute) ** *Dermal 1 mg/cm² (Local, Acute) **	
Magnesite	Inhalation 6.2 mg/m³ (Local, Chronic) *Oral 7.23 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 0.94 mg/m³ (Local, Chronic) ** *Oral 7.23 mg/kg bw/day (Systemic, Acute) ** *Inhalation 8.63 mg/m³ (Local, Acute) **	Not Available
Talc	Dermal 43.2 mg/kg bw/day (Systemic, Chronic) Inhalation 2.16 mg/m³ (Systemic, Chronic) Dermal 4.54 mg/cm² (Local, Chronic) Inhalation 3.6 mg/m³ (Local, Chronic) Inhalation 2.16 mg/m³ (Systemic, Acute) Inhalation 3.6 mg/m³ (Local, Acute) *Dermal 21.6 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 1.08 mg/m³ (Systemic, Chronic) ** *Oral 160 mg/kg bw/day (Systemic, Chronic) ** *Dermal 2.27 mg/cm² (Local, Chronic) ** *Inhalation 1.8 mg/m³ (Local, Chronic) ** *Inhalation 1.08 mg/m³ (Systemic, Acute) ** *Oral 160 mg/kg bw/day (Systemic, Acute) ** *Inhalation 1.8 mg/m³ (Local, Acute) **	597.97 mg/L (Water (Fresh)) 597.97 mg/L (Water - Intermittent release) 141.26 mg/L (Water (Marine)) 31.33 mg/kg sediment dw (Sediment (Fresh Water)) 3.13 mg/kg sediment dw (Sediment (Marine))
2,4,6-tris[(dimethylamino)methyl]phenol	Dermal 0.15 mg/kg bw/day (Systemic, Chronic) Inhalation 0.53 mg/m³ (Systemic, Chronic) Dermal 0.6 mg/kg bw/day (Systemic, Acute) Inhalation 2.1 mg/m³ (Systemic, Acute) *Dermal 0.075 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 0.13 mg/m³ (Systemic, Chronic) ** *Oral 0.075 mg/kg bw/day (Systemic, Chronic) ** *Dermal 0.075 mg/kg bw/day (Systemic, Acute) ** *Inhalation 0.13 mg/m³ (Systemic, Acute) **	0.046 mg/L (Water (Fresh)) 0.46 mg/L (Water - Intermittent release) 0.005 mg/L (Water (Marine)) 0.262 mg/kg sediment dw (Sediment (Fresh Water)) 0.026 mg/kg sediment dw (Sediment (Marine)) 0.025 mg/kg soil dw (Soil) 0.2 mg/L (STP)
trimethylolpropane	Dermal 0.94 mg/kg bw/day (Systemic, Chronic) Inhalation 3.3 mg/m³ (Systemic, Chronic) *Dermal 0.34 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 0.58 mg/m³ (Systemic, Chronic) ** *Oral 0.34 mg/kg bw/day (Systemic, Chronic) **	Not Available
silica amorphous	Inhalation 0.3 mg/m³ (Local, Chronic) Inhalation 15 mg/m³ (Local, Acute) *Oral 3.29 mg/kg bw/day (Systemic, Chronic) **	Not Available
barium sulfate	Inhalation 10 mg/m³ (Systemic, Chronic) Inhalation 10 mg/m³ (Local, Chronic) *Inhalation 10 mg/m³ (Systemic, Chronic) ** *Oral 13 000 mg/kg bw/day (Systemic, Chronic) **	115 µg/L (Water (Fresh)) 600.4 mg/kg sediment dw (Sediment (Fresh Water)) 207.7 mg/kg soil dw (Soil) 62.2 mg/L (STP)
titanium dioxide	Inhalation 0.8 mg/m³ (Local, Chronic) *Oral 700 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 28 µg/m³ (Local, Chronic) **	0.127 mg/L (Water (Fresh)) 0.61 mg/L (Water - Intermittent release) 1 mg/L (Water (Marine)) 1000 mg/kg sediment dw (Sediment (Fresh Water)) 100 mg/kg sediment dw (Sediment (Marine)) 100 mg/kg soil dw (Soil) 100 mg/L (STP)

* Values for General Population

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
UK Workplace Exposure Limits (WELs).	Magnesite	Magnesite: respirable dust	4 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	Magnesite	Magnesite: inhalable dust	10 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	Talc	Talc, respirable dust	1 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	silica amorphous	Silica, fused respirable dust	0.08 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	silica amorphous	Diatomaceous earth, natural, respirable dust	1.2 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	barium sulfate	Barium sulphate: inhalable dust	10 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	barium sulfate	Barium sulphate: respirable dust	4 mg/m3	Not Available	Not Available	Not Available

Continued...

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
UK Workplace Exposure Limits (WELs).	titanium dioxide	Titanium dioxide: respirable	4 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	titanium dioxide	Titanium dioxide: total inhalable	10 mg/m3	Not Available	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
benzyl alcohol	30 ppm	52 ppm	740 ppm
tetraethylenepentamine	15 mg/m3	130 mg/m3	790 mg/m3
C18 fatty acid dimers/ polyethylenepolyamine polyamides	30 mg/m3	330 mg/m3	2,000 mg/m3
triethylenetetramine	3 ppm	14 ppm	83 ppm
Magnesite	45 mg/m3	260 mg/m3	1,600 mg/m3
2,4,6-tris[(dimethylamino)methyl]phenol	6.5 mg/m3	72 mg/m3	430 mg/m3
glass, oxide	15 mg/m3	170 mg/m3	990 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
barium sulfate	15 mg/m3	170 mg/m3	990 mg/m3
titanium dioxide	30 mg/m3	330 mg/m3	2,000 mg/m3

Ingredient	Original IDLH	Revised IDLH
benzyl alcohol	Not Available	Not Available
formaldehyde/ benzenamine, hydrogenated	Not Available	Not Available
tetraethylenepentamine	Not Available	Not Available
tall oil/ tetraethylenepentamine polyamides	Not Available	Not Available
C18 fatty acid dimers/ polyethylenepolyamine polyamides	Not Available	Not Available
triethylenetetramine	Not Available	Not Available
Chlorite	Not Available	Not Available
Dolomite	Not Available	Not Available
Magnesite	Not Available	Not Available
Talc	1,000 mg/m3	Not Available
bis[(dimethylamino)methyl]phenol	Not Available	Not Available
2,4,6-tris[(dimethylamino)methyl]phenol	Not Available	Not Available
trimethylolpropane	Not Available	Not Available
glass, oxide	Not Available	Not Available
silica amorphous	3,000 mg/m3	Not Available
barium sulfate	Not Available	Not Available
nepheline	Not Available	Not Available
titanium dioxide	5,000 mg/m3	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
benzyl alcohol	E	≤ 0.1 ppm
formaldehyde/ benzenamine, hydrogenated	E	≤ 0.1 ppm
tetraethylenepentamine	E	≤ 0.1 ppm
tall oil/ tetraethylenepentamine polyamides	E	≤ 0.1 ppm
C18 fatty acid dimers/ polyethylenepolyamine polyamides	E	≤ 0.1 ppm
triethylenetetramine	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.*	

Continued...

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
trimethylolpropane	E	≤ 0.01 mg/m³
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.*	

8.2. Exposure controls

8.2.1. 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. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk.
8.2.2. Individual protection measures, such as personal protective equipment	
Eye and face protection	‣ Safety glasses with side shields. ‣ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent] ‣ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.
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. ‣ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.
Body protection	See Other protection below
Other protection	‣ Overalls. ‣ P.V.C apron. ‣ Barrier cream.

Respiratory protection

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

· Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
· The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
· Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
· Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
· Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)
· Use approved positive flow mask if significant quantities of dust becomes airborne.
· Try to avoid creating dust conditions.
Class P2 particulate filters are used for protection against mechanically and thermally generated particulates or both.
P2 is a respiratory filter rating under various international standards, Filters at least 94% of airborne particles
Suitable for:
· Relatively small particles generated by mechanical processes eg. grinding, cutting, sanding, drilling, sawing.
· Sub-micron thermally generated particles e.g. welding fumes, fertilizer and bushfire smoke.
· Biologically active airborne particles under specified infection control applications e.g. viruses, bacteria, COVID-19, SARS

8.2.3. Environmental exposure controls

See section 12

SECTION 9 Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Off White Paste

Physical state	Free-flowing Paste	**Relative density (Water = 1)**	1.5-2
Odour	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 (°C)**	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

Continued...

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
Nanoform Solubility	Not Available	**Nanoform Particle Characteristics**	Not Available
Particle Size	Not Available		

9.2. Other information

Not Available

SECTION 10 Stability and reactivity

10.1.Reactivity	See section 7.2
10.2. Chemical stability	Product is considered stable and hazardous polymerisation will not occur.
10.3. Possibility of hazardous reactions	See section 7.2
10.4. Conditions to avoid	See section 7.2
10.5. Incompatible materials	See section 7.2
10.6. Hazardous decomposition products	See section 5.3

SECTION 11 Toxicological information

11.1. Information on toxicological effects

Inhaled	The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. 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'.
Ingestion	Accidental ingestion of the material may be damaging to the health of the individual. Concentrated solutions of many cationics may cause corrosive damage to mucous membranes and the oesophagus. Nausea and vomiting (sometimes bloody) may follow ingestion. Ingestion of amine epoxy-curing agents (hardeners) may cause severe abdominal pain, nausea, vomiting or diarrhoea. The vomitus may contain blood and mucous. Ingestion of soluble barium compounds may result in ulceration of the mucous membranes of the gastrointestinal tract, tightness in the muscles of the face and neck, gastroenteritis, vomiting, diarrhoea, muscular tremors and paralysis, anxiety, weakness, laboured breathing, cardiac irregularity due to contractions of smooth striated and cardiac muscles (often violent and painful), slow irregular pulse, hypertension, convulsions and respiratory failure.
Skin Contact	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. Repeated exposure may cause skin cracking, flaking or drying following normal handling and use. There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons. 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. 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.
Eye	Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn). Many cationic surfactants are very irritating to the eyes at low concentration. Concentrated solutions can cause severe burns with permanent clouding.
Chronic	Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following.

Continued...

	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. 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. 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.

Steel Reinforced Epoxy Hardener - Slow Cure - Twin Tube Part B

TOXICITY	IRRITATION
Not Available	Not Available

benzyl alcohol

TOXICITY	IRRITATION
Dermal (rabbit) LD50: 2000 mg/kg[2]	Eye (rabbit): 0.75 mg open SEVERE
Inhalation (Rat)LC50: >4178 mg/m3/4h[2]	Eye: adverse effect observed (irritating)[1]
Inhalation (Rat)LC50: 1000 ppm/8h[2]	Skin (man): 16 mg/48h-mild
Inhalation (Rat)LCLo: 2000 ppm/4h[2]	Skin (rabbit):10 mg/24h open-mild
Oral (Rat) LD50: 1230 mg/kg[2]	Skin: no adverse effect observed (not irritating)[1]

formaldehyde/ benzenamine, hydrogenated

TOXICITY	IRRITATION
Dermal (rabbit) LD50: >1000 mg/kg[1]	Skin: adverse effect observed (corrosive)[1]
Oral (Rat) LD50: >50<300 mg/kg[1]	

tetraethylenepentamine

TOXICITY	IRRITATION
Dermal (rabbit) LD50: 660 mg/kg[2]	Eye (rabbit): 100 mg/24h moderate
Oral (Rat) LD50: 3990 mg/kg[2]	Eye (rabbit): 5 mg moderate
	Skin (rabbit): 495 mg SEVERE
	Skin (rabbit): 5 mg/24h SEVERE

tall oil/ tetraethylenepentamine polyamides

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

C18 fatty acid dimers/ polyethylenepolyamine polyamides

TOXICITY	IRRITATION
dermal (rat) LD50: >2000 mg/kg[1]	Not Available
Oral (Rabbit) LD50; 800 mg/kg[2]	

triethylenetetramine

TOXICITY	IRRITATION
Dermal (rabbit) LD50: 805 mg/kg[2]	Not Available
Oral (Rat) LD50: 1591.4 mg/kg[1]	

Chlorite

TOXICITY	IRRITATION
Not Available	Not Available

Dolomite

TOXICITY	IRRITATION
Not Available	Not Available

Magnesite

TOXICITY	IRRITATION
Oral (Rat) LD50: >2000 mg/kg[1]	Not Available

Talc

TOXICITY	IRRITATION
dermal (rat) LD50: >2000 mg/kg[1]	Eye: no adverse effect observed (not irritating)[1]
Inhalation(Rat) LC50: >2.1 mg/l4h[1]	Skin: no adverse effect observed (not irritating)[1]
Oral (Rat) LD50: >5000 mg/kg[1]	

Continued...

bis[(dimethylamino)methyl]phenol

TOXICITY	IRRITATION
Not Available	Not Available

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

TOXICITY	IRRITATION
dermal (rat) LD50: >973 mg/kg[1]	Eye: adverse effect observed (irreversible damage)[1]
Oral (Rat) LD50: 1200 mg/kg[2]	Skin: adverse effect observed (corrosive)[1]

trimethylolpropane

TOXICITY	IRRITATION
dermal (rat) LD50: >500 mg/kg[2]	Not Available
Inhalation(Rat) LC50: >0.29 mg/l4h[2]	
Oral (Mouse) LD50; 14000 mg/kg[2]	

glass, oxide

TOXICITY	IRRITATION
Not Available	Not Available

silica amorphous

TOXICITY	IRRITATION
dermal (rat) LD50: >2000 mg/kg[1]	Eye (rabbit): non-irritating ** [Grace]
Inhalation(Rat) LC50: >0.09<0.84 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]

barium sulfate

TOXICITY	IRRITATION
dermal (rat) LD50: >2000 mg/kg[1]	Not Available
Oral (Mouse) LD50; >3000 mg/kg[2]	

nepheline

TOXICITY	IRRITATION
Not Available	Not Available

titanium dioxide

TOXICITY	IRRITATION
dermal (hamster) LD50: >=10000 mg/kg[2]	Eye: no adverse effect observed (not irritating)[1]
Inhalation(Rat) LC50: >2.28 mg/l4h[1]	Skin (human): 0.3 mg /3D (int)-mild *
Oral (Rat) LD50: >=2000 mg/kg[1]	Skin: no adverse effect observed (not irritating)[1]

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*

benzyl alcohol

Unlike benzylic alcohols, the beta-hydroxyl group of the members of benzyl alkyl alcohols contributes to break down reactions but do not undergo phase II metabolic activation. Though structurally similar to cancer causing ethyl benzene, phenethyl alcohol is only of negligible concern due to limited similarity in their pattern of activity.
For benzoates:
Benzyl alcohol, benzoic acid and its sodium and potassium salt have a common metabolic and excretion pathway. All but benzyl alcohol are considered to be unharmful and of low acute toxicity. They may cause slight irritation by oral, dermal or inhalation exposure except sodium benzoate which doesn't irritate the skin.
Adverse reactions to fragrances in perfumes and fragranced cosmetic products include allergic contact dermatitis, irritant contact dermatitis, sensitivity to light, immediate contact reactions, and pigmented contact dermatitis. Airborne and connubial contact dermatitis occurs. Contact allergy is a lifelong condition, so symptoms may occur on re-exposure.
Fragrance allergens act as haptens, low molecular weight chemicals that cause an immune response only when attached to a carrier protein. However, not all sensitizing fragrance chemicals are directly reactive, but require previous activation. A prehapten is a chemical that itself causes little or no sensitization, but is transformed into a hapten in the skin (bioactivation), usually via enzyme catalysis.
This is a member or analogue of a group of benzyl derivatives generally regarded as safe (GRAS), based partly on their self-limiting properties as flavouring substances in food. In humans and other animals, they are rapidly absorbed, broken down and excreted, with a wide safety margin. They also lack significant potential to cause genetic toxicity and mutations.
The aryl alkyl alcohol (AAA) fragrance ingredients have diverse chemical structures, with similar metabolic and toxicity profiles. The AAA fragrances demonstrate low acute and subchronic toxicity by skin contact and swallowing. At concentrations likely to be encountered by consumers, AAA fragrance ingredients are non-irritating to the skin.

formaldehyde/ benzenamine, hydrogenated

Amine adducts have much reduced volatility and are less irritating to the skin and eyes than amine hardeners. However commercial amine adducts may contain a percentage of unreacted amine and all unnecessary contact should be avoided.
Amine adducts are prepared by reacting excess primary amines with epoxy resin.

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. Studies done on experimental animals showed that it does not cause cancer or foetal developmental defects.

Continued...

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. Higher concentrations of certain amines can produce severe respiratory irritation, characterized by discharge from the nose, coughing, difficulty in breathing and chest pain. 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.
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. Based on these results,the substance is not predicted to have any genotoxic potential. *REACh Dossier
GLASS, OXIDE	A similar spherical glass powder was nontoxic to rats at 5,000 mg/kg. All animals survived, gained weight and appeared active and healthy. There were no signs of gross toxicity, adverse pharmacologic effects or abnormal behavior. There are no known reports of subchronic toxicity of nonfibrous glass. There are no known reports of carcinogenicity of nonfibrous glass When tested for primary irritation potential, a similar material caused minimal irritation to eyes and was non-irritating to skin. Dust in excess of recommended exposure limits may result in irritation to the respiratory tract
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.
NEPHELINE	No data available No data available
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. **WARNING:** This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.
Steel Reinforced Epoxy Hardener - Slow Cure - Twin Tube Part B & benzyl alcohol & tetraethylenepentamine & tall oil/ tetraethylenepentamine polyamides & C18 FATTY ACID DIMERS/ POLYETHYLENEPOLYAMINE 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.
Steel Reinforced Epoxy Hardener - Slow Cure - Twin Tube Part B & tall oil/ tetraethylenepentamine polyamides & C18 FATTY ACID DIMERS/ POLYETHYLENEPOLYAMINE POLYAMIDES	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. There do not seem to be big differences in response with the variation on EA length used for the production of the AAI. 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. QACs may cause muscle paralysis with no brain involvement. 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.
Steel Reinforced Epoxy Hardener - Slow Cure - Twin Tube Part B & 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. Repeated exposure (without personal protection) may cause mechanical irritation of the eye and drying/cracking of the skin. When experimental animals inhale synthetic amorphous silica (SAS) dust, it dissolves in the lung fluid and is rapidly eliminated.
Steel Reinforced Epoxy Hardener - Slow Cure - Twin Tube Part B & TITANIUM DIOXIDE	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.
benzyl alcohol & TITANIUM DIOXIDE	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.
formaldehyde/ benzenamine, hydrogenated & tetraethylenepentamine & tall oil/ tetraethylenepentamine polyamides & C18 FATTY ACID DIMERS/ POLYETHYLENEPOLYAMINE POLYAMIDES & TITANIUM DIOXIDE	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. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant.
formaldehyde/ benzenamine, hydrogenated & GLASS, OXIDE & BARIUM SULFATE & TITANIUM DIOXIDE	No significant acute toxicological data identified in literature search.

Continued...

tetraethylenepentamine & tall oil/ tetraethylenepentamine polyamides & C18 FATTY ACID DIMERS/ POLYETHYLENEPOLYAMINE POLYAMIDES	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. As such, they require careful handling.
tetraethylenepentamine & tall oil/ tetraethylenepentamine polyamides & C18 FATTY ACID DIMERS/ POLYETHYLENEPOLYAMINE POLYAMIDES & TITANIUM DIOXIDE	The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
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. Cluster members have been shown to cause skin irritation or sensitisation, eye irritation and genetic defects, but have not been shown to cause cancer. 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. Long term dermal application may cause thickening of the epidermis and other skin changes.
tall oil/ tetraethylenepentamine polyamides & C18 FATTY ACID DIMERS/ POLYETHYLENEPOLYAMINE 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.

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*

11.2 Information on other hazards

11.2.1. Endocrine disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.

11.2.2. Other information

See Section 11.1

SECTION 12 Ecological information

12.1. Toxicity

Steel Reinforced Epoxy Hardener - Slow Cure - Twin Tube Part B

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

benzyl alcohol

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	96h	Algae or other aquatic plants	76.828mg/l	2
EC50	72h	Algae or other aquatic plants	500mg/l	2
EC50	48h	Crustacea	230mg/l	2
LC50	96h	Fish	10mg/l	4
NOEC(ECx)	336h	Fish	5.1mg/l	2

formaldehyde/ benzenamine, hydrogenated

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	43.94mg/l	2
EC50	48h	Crustacea	15.4mg/l	2
LC50	96h	Fish	63mg/l	2
EC10(ECx)	72h	Algae or other aquatic plants	1.2mg/l	2

tetraethylenepentamine

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

Continued...

tall oil/ tetraethylenepentamine polyamides

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
EC50	72h	Algae or other aquatic plants	4.11mg/l	Not Available
EC50	48h	Crustacea	5.19mg/l	Not Available
LC50	96h	Fish	7.07mg/l	Not Available
EC50(ECx)	72h	Algae or other aquatic plants	4.11mg/l	Not Available

triethylenetetramine

Endpoint	Test Duration (hr)	Species	Value	Source
BCF	1008h	Fish	<0.5	7
EC50	72h	Algae or other aquatic plants	2.5mg/l	1
EC50	48h	Crustacea	31.1mg/l	1
EC50	96h	Algae or other aquatic plants	3.7mg/l	4
ErC50	72h	Algae or other aquatic plants	2.5mg/l	1
LC50	96h	Fish	180mg/l	1
EC10(ECx)	72h	Algae or other aquatic plants	0.67mg/l	1

Chlorite

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

Dolomite

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

Magnesite

Endpoint	Test Duration (hr)	Species	Value	Source
LC50	96h	Fish	2120mg/l	2
EC50	72h	Algae or other aquatic plants	>18.5mg/l	2
NOEC(ECx)	72h	Algae or other aquatic plants	18.5mg/l	2

Talc

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	96h	Algae or other aquatic plants	7202.7mg/l	2
LC50	96h	Fish	89581.016mg/l	2
NOEC(ECx)	720h	Algae or other aquatic plants	918.089mg/l	2

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	72h	Algae or other aquatic plants	2.8mg/l	2
EC50	48h	Crustacea	>100mg/l	2
EC50(ECx)	24h	Crustacea	280mg/l	Not Available
LC50	96h	Fish	1000mg/l	Not Available

trimethylolpropane

Endpoint	Test Duration (hr)	Species	Value	Source
BCF	1008h	Fish	0.4-2.6	7
EC50	72h	Algae or other aquatic plants	>1000mg/l	2
EC50	48h	Crustacea	10330-16360mg/l	4
LC50	96h	Fish	>100mg/l	2
EC0(ECx)	48h	Crustacea	>=102mg/l	1

glass, oxide

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	>1000mg/l	2
LC50	96h	Fish	>1000mg/l	2
NOEC(ECx)	72h	Crustacea	>=1000mg/l	2

Continued...

silica amorphous

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

barium sulfate

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	>1.15mg/l	2
EC50	48h	Crustacea	32mg/L	2
NOEC(ECx)	72h	Algae or other aquatic plants	>=1.15mg/l	2
LC50	96h	Fish	>3.5mg/l	2

nepheline

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

titanium dioxide

Endpoint	Test Duration (hr)	Species	Value	Source
BCF	1008h	Fish	<1.1-9.6	7
EC50	72h	Algae or other aquatic plants	3.75-7.58mg/l	4
EC50	48h	Crustacea	1.9mg/l	2
EC50	96h	Algae or other aquatic plants	179.05mg/l	2
LC50	96h	Fish	1.85-3.06mg/l	4
NOEC(ECx)	672h	Fish	>=0.004mg/L	2

Legend: *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 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.
Wastes resulting from use of the product must be disposed of on site or at approved waste sites.
DO NOT discharge into sewer or waterways.

12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
benzyl alcohol	LOW	LOW
tetraethylenepentamine	LOW	LOW
triethylenetetramine	LOW	LOW
Magnesite	LOW	LOW
2,4,6-tris[(dimethylamino)methyl]phenol	HIGH	HIGH
trimethylolpropane	LOW	LOW
silica amorphous	LOW	LOW
titanium dioxide	HIGH	HIGH

12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
benzyl alcohol	LOW (LogKOW = 1.1)
tetraethylenepentamine	LOW (LogKOW = -3.1604)
triethylenetetramine	LOW (BCF = 5)
Magnesite	LOW (LogKOW = -0.4605)
2,4,6-tris[(dimethylamino)methyl]phenol	LOW (LogKOW = 0.773)
trimethylolpropane	LOW (BCF = 16.2)
silica amorphous	LOW (LogKOW = 0.5294)
titanium dioxide	LOW (BCF = 10)

12.4. Mobility in soil

Ingredient	Mobility
benzyl alcohol	LOW (KOC = 15.66)
tetraethylenepentamine	LOW (KOC = 1098)

Continued...

Ingredient	Mobility
triethylenetetramine	LOW (KOC = 309.9)
Magnesite	HIGH (KOC = 1)
2,4,6-tris[(dimethylamino)methyl]phenol	LOW (KOC = 15130)
trimethylolpropane	HIGH (KOC = 1)
silica amorphous	LOW (KOC = 23.74)
titanium dioxide	LOW (KOC = 23.74)

12.5. Results of PBT and vPvB assessment

	P	B	T
Relevant available data	Not Available	Not Available	Not Available
PBT	✗	✗	✗
vPvB	✗	✗	✗

PBT Criteria fulfilled?	No
vPvB	No

12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.

12.7. Other adverse effects

No evidence of ozone depleting properties were found in the current literature.

SECTION 13 Disposal considerations

13.1. Waste treatment methods

Product / Packaging disposal	▸ Containers may still present a chemical hazard/ danger when empty. ▸ Return to supplier for reuse/ recycling if possible. Otherwise: ▸ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. ▸ **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. ▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▸ Recycle wherever possible or consult manufacturer for recycling options. ▸ Consult State Land Waste Authority for disposal. ▸ Bury or incinerate residue at an approved site.
Waste treatment options	Not Available
Sewage disposal options	Not Available

SECTION 14 Transport information

HAZCHEM	Not Applicable

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

14.1. **UN number or ID number**	Not Applicable
14.2. **UN proper shipping name**	Not Applicable
14.3. **Transport hazard class(es)**	Class: Not Applicable Subsidiary Hazard: Not Applicable
14.4. **Packing group**	Not Applicable
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Hazard identification (Kemler): Not Applicable Classification code: Not Applicable Hazard Label: Not Applicable Special provisions: Not Applicable Limited quantity: Not Applicable Tunnel Restriction Code: Not Applicable

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

14.1. **UN number**	Not Applicable

Continued...

14.2. **UN proper shipping name**	Not Applicable
14.3. **Transport hazard class(es)**	ICAO/IATA Class: Not Applicable ICAO / IATA Subsidiary Hazard: Not Applicable ERG Code: Not Applicable
14.4. **Packing group**	Not Applicable
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Special provisions: Not Applicable Cargo Only Packing Instructions: Not Applicable Cargo Only Maximum Qty / Pack: Not Applicable Passenger and Cargo Packing Instructions: Not Applicable Passenger and Cargo Maximum Qty / Pack: Not Applicable Passenger and Cargo Limited Quantity Packing Instructions: Not Applicable Passenger and Cargo Limited Maximum Qty / Pack: Not Applicable

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

14.1. **UN number**	Not Applicable
14.2. **UN proper shipping name**	Not Applicable
14.3. **Transport hazard class(es)**	IMDG Class: Not Applicable IMDG Subsidiary Hazard: Not Applicable
14.4. **Packing group**	Not Applicable
14.5 **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	EMS Number: Not Applicable Special provisions: Not Applicable Limited Quantities: Not Applicable

Inland waterways transport (ADN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

14.1. **UN number**	Not Applicable
14.2. **UN proper shipping name**	Not Applicable
14.3. **Transport hazard class(es)**	Not Applicable: Not Applicable
14.4. **Packing group**	Not Applicable
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Classification code: Not Applicable Special provisions: Not Applicable Limited quantity: Not Applicable Equipment required: Not Applicable Fire cones number: Not Applicable

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

Not Applicable

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

Product name	Group
benzyl alcohol	Not Available
formaldehyde/ benzenamine, hydrogenated	Not Available
tetraethylenepentamine	Not Available
tall oil/ tetraethylenepentamine polyamides	Not Available
C18 fatty acid dimers/ polyethylenepolyamine polyamides	Not Available
triethylenetetramine	Not Available
Chlorite	Not Available
Dolomite	Not Available
Magnesite	Not Available

Continued...

Product name	Group
Talc	Not Available
bis[(dimethylamino)methyl]phenol	Not Available
2,4,6-tris[(dimethylamino)methyl]phenol	Not Available
trimethylolpropane	Not Available
glass, oxide	Not Available
silica amorphous	Not Available
barium sulfate	Not Available
nepheline	Not Available
titanium dioxide	Not Available

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
benzyl alcohol	Not Available
formaldehyde/ benzenamine, hydrogenated	Not Available
tetraethylenepentamine	Not Available
tall oil/ tetraethylenepentamine polyamides	Not Available
C18 fatty acid dimers/ polyethylenepolyamine polyamides	Not Available
triethylenetetramine	Not Available
Chlorite	Not Available
Dolomite	Not Available
Magnesite	Not Available
Talc	Not Available
bis[(dimethylamino)methyl]phenol	Not Available
2,4,6-tris[(dimethylamino)methyl]phenol	Not Available
trimethylolpropane	Not Available
glass, oxide	Not Available
silica amorphous	Not Available
barium sulfate	Not Available
nepheline	Not Available
titanium dioxide	Not Available

SECTION 15 Regulatory information

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

benzyl alcohol is found on the following regulatory lists

Great Britain GB Biocidal Active Substances
Great Britain GB mandatory classification and labelling (GB MCL)
Great Britain GB mandatory classification and labelling (GB MCL) technical reports

formaldehyde/ benzenamine, hydrogenated is found on the following regulatory lists

Not Applicable

tetraethylenepentamine is found on the following regulatory lists

Great Britain GB mandatory classification and labelling list (GB MCL)

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

Not Applicable

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

Not Applicable

triethylenetetramine is found on the following regulatory lists

Great Britain GB mandatory classification and labelling list (GB MCL)

Chlorite is found on the following regulatory lists

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

Dolomite is found on the following regulatory lists

Not Applicable

Magnesite is found on the following regulatory lists

Continued...

UK Workplace Exposure Limits (WELs).

Talc is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
UK Workplace Exposure Limits (WELs).

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

Great Britain GB mandatory classification and labelling list (GB MCL)

trimethylolpropane is found on the following regulatory lists

Not Applicable

glass, oxide is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

silica amorphous is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
Great Britain GB Biocidal Active Substances
Great Britain GB mandatory classification and labelling (GB MCL) technical reports
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
UK Workplace Exposure Limits (WELs).

barium sulfate is found on the following regulatory lists

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
UK Workplace Exposure Limits (WELs).

nepheline is found on the following regulatory lists

Not Applicable

titanium dioxide is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
Great Britain GB mandatory classification and labelling list (GB MCL)
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
UK Workplace Exposure Limits (WELs).

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

Information according to 2012/18/EU (Seveso III):

Seveso Category	E2

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	No (Chlorite; bis[(dimethylamino)methyl]phenol; nepheline)
Canada - DSL	No (Chlorite; Dolomite; bis[(dimethylamino)methyl]phenol)
Canada - NDSL	No (benzyl alcohol; formaldehyde/ benzenamine, hydrogenated; tetraethylenepentamine; tall oil/ tetraethylenepentamine polyamides; C18 fatty acid dimers/ polyethylenepolyamine polyamides; triethylenetetramine; Chlorite; Magnesite; Talc; bis[(dimethylamino)methyl]phenol; 2,4,6-tris[(dimethylamino)methyl]phenol; trimethylolpropane; glass, oxide; barium sulfate; nepheline)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	No (formaldehyde/ benzenamine, hydrogenated; C18 fatty acid dimers/ polyethylenepolyamine polyamides; nepheline)
Japan - ENCS	No (formaldehyde/ benzenamine, hydrogenated; tall oil/ tetraethylenepentamine polyamides; Chlorite; Dolomite; glass, oxide; nepheline)
Korea - KECI	No (bis[(dimethylamino)methyl]phenol)
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	No (Chlorite; bis[(dimethylamino)methyl]phenol; nepheline)
Taiwan - TCSI	Yes
Mexico - INSQ	No (formaldehyde/ benzenamine, hydrogenated; tall oil/ tetraethylenepentamine polyamides; Chlorite; bis[(dimethylamino)methyl]phenol)
Vietnam - NCI	Yes
Russia - FBEPH	No (formaldehyde/ benzenamine, hydrogenated; C18 fatty acid dimers/ polyethylenepolyamine polyamides; Chlorite; bis[(dimethylamino)methyl]phenol; nepheline)
Legend:	*Yes = All CAS declared ingredients are on the inventory* *No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.*

Continued...

SECTION 16 Other information

Revision Date	10/25/2023
Initial Date	02/08/2021

Full text Risk and Hazard codes

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.

SDS Version Summary

Version	Date of Update	Sections Updated
5.19	10/24/2023	Toxicological information - Acute Health (skin), Toxicological information - Acute Health (swallowed), First Aid measures - Advice to Doctor, Toxicological information - Chronic Health, Hazards identification - Classification, Disposal considerations - Disposal, Ecological Information - Environmental, Exposure controls / personal protection - Exposure Standard, Firefighting measures - Fire Fighter (fire/explosion hazard), Firefighting measures - Fire Fighter (fire fighting), Composition / information on ingredients - Ingredients, Exposure controls / personal protection - Personal Protection (Respirator), Handling and storage - Storage (storage incompatibility), Identification of the substance / mixture and of the company / undertaking - Synonyms

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. Risks may be determined by reference to Exposures Scenarios.
For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:
EN 166 Personal eye-protection
EN 340 Protective clothing
EN 374 Protective gloves against chemicals and micro-organisms
EN 13832 Footwear protecting against chemicals
EN 133 Respiratory protective devices

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	Classification Procedure
Sensitisation (Skin) Category 1, H317	Calculation method
Hazardous to the Aquatic Environment Long-Term Hazard Category 2, H411	Calculation method
, EUH211	Calculation method

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