Safety Data Sheet

LOCTITE PC 9593 B HARDENER

SDS No. : 673241
V001.1
Date of issue: 19.12.2024

Section 1. Identification of the substance/preparation and of the company/undertaking

Product name: LOCTITE PC 9593 B HARDENER

Intended use: 2-Component epoxy adhesive

Supplier:
Henkel Australia Pty Ltd
135-141 Canterbury Road
Kilsyth, Victoria, 3137
Australia

Phone: +61 (3) 9724 6444

E-mail address of person responsible for Safety Data Sheet: SDSinfo.Adhesive@henkel.com

Emergency Telephone for Chemical Accidents: 24 HOUR EMERGENCY CONTACT NUMBER: 1800 032 379

Section 2. Hazards identification

Classification of the substance or mixture
Hazardous according to the criteria of Safe Work Australia.

GHS Classification:

Hazard Class	Hazard Category
Skin corrosion	Sub-category 1B
Serious eye damage/eye irritation	Category 1
Skin sensitizer	Category 1
Acute hazards to the aquatic environment	Category 3

Hazard pictogram:



Signal word: Danger

Hazard statement(s):
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H402 Harmful to aquatic life.

Precautionary Statement(s):

Prevention:
P261 Avoid breathing mist/vapours.
P264 Wash hands thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

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].
P304+P340+P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician.
P305+P351+P338+P315 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to remove. Continue rinsing. Get immediate medical advice/attention.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.

Storage:
P405 Store locked up.

Disposal:
P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations.

Dangerous Goods information:
Classified as Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code).

Section 3. Composition / information on ingredients

General chemical description: Mixture

Identity of ingredients:

Chemical ingredients	CAS-No.	Proportion
Aluminium oxide - non fibrous form	1344-28-1	30- < 60 %
9,12-Octadecadienoic acid (Z,Z)-, dimer, polymer	68541-13-9	10- < 30 %
Silicon carbide	409-21-2	< 10 %
N,N'-bis(3-aminopropyl)ethylenediamine	10563-26-5	5- < 10 %
Talc	14807-96-6	< 10 %
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	3- < 5 %
Silicon dioxide, crystalline	7631-86-9	< 10 %
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4)	104-15-4	1- < 3 %
Magnesium oxide	1309-48-4	< 10 %
Calcium oxide	1305-78-8	1- < 3 %
Silica, amorphous, fumed, cryst.-free	112945-52-5	< 10 %
salicylic acid	69-72-7	< 1 %
N-(2-aminoethyl)-1,3-propanediamine	13531-52-7	0.1- < 1 %
N-(3-(Trimethoxysilyl)propyl)ethylenediamine	1760-24-3	0.1- < 1 %

Section 4. First aid measures

Ingestion:
DO NOT induce vomiting unless directed to do so by medical personnel.
Never give anything by mouth to an unconscious person.
Get medical attention.

Skin:
Immediately flush skin with plenty of water (using soap, if available).
Remove contaminated clothing and footwear.
Get medical attention.
Wash clothing before reuse.

Eyes:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Inhalation:	Remove from exposure area to fresh air. Keep affected person warm and at rest. If symptoms develop and persist, get medical attention.
First Aid facilities:	Eye wash and safety shower Normal washroom facilities
Medical attention and special treatment:	Treat symptomatically and supportively.

Section 5. Fire fighting measures

Suitable extinguishing media:	Water spray (fog), foam, dry chemical or carbon dioxide.
Decomposition products in case of fire:	Thermal decomposition can lead to release of irritating gases and vapors. carbon monoxide Carbon dioxide Oxides of nitrogen.
Special protective equipment for fire-fighters:	Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA). Wear full protective clothing.
Additional fire fighting advice:	In case of fire, keep containers cool with water spray.

Section 6. Accidental release measures

Environmental precautions:	Do not allow product to enter sewer or waterways.
Clean-up methods:	Evacuate and ventilate spill area; dike spill to prevent entry into water system; wear full protective equipment during clean-up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Scrape up as much material as possible. Store in a partly filled, closed container until disposal. Refer to Section 8 "Exposure Controls / Personal Protection" prior to clean up.

Section 7. Handling and storage

Precautions for safe handling:	Use only with adequate ventilation. Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Keep container closed.

Section 8. Exposure controls / personal protection

National exposure standards:

Ingredient [Regulated substance]	form of exposure	TWA (ppm)	TWA (mg/m3)	Peak Limit. (ppm)	Peak Limit. (mg/m3)	STEL (ppm)	STEL (mg/m3)
alpha-Alumina (Al2O3); Aluminium oxide 1344-28-1	Inhalable dust.		10				
SILICON CARBIDE 409-21-2	Inhalable dust.		10				
TALC, (CONTAINING NO ASBESTOS FIBRES) 14807-96-6			2.5				
SILICA, AMORPHOUS: FUMED SILICA (RESPIRABLE DUST) 7631-86-9	Respirable dust.		2				
MAGNESIUM OXIDE (FUME) 1309-48-4	Fume.		10				
CALCIUM OXIDE 1305-78-8			2				
SILICA, AMORPHOUS: FUMED SILICA (RESPIRABLE DUST) 112945-52-5	Respirable dust.		2				
Nuisance dusts, inhalable dust 112945-52-5	Inhalable dust.		10				

None

Engineering controls: Ensure good ventilation/suction at the workplace.

Eye protection: Safety goggles or safety glasses with side shields.
Use of a full face shield is recommended.

Skin protection: Use chemical resistant, impermeable clothing including gloves and either an apron or body suit to prevent skin contact.
Impervious gloves should be used at all times when handling this product.
The use of polyvinyl alcohol (PVA) gloves is recommended.

Respiratory protection: If inhalation risk exists, wear a respirator or air supplied mask complying with the requirements of AS/NZS 1715 and AS/NZS 1716.

Section 9. Physical and chemical properties

Appearance: Gray / Grey
paste
Odor: amine-like
pH:(Concentration: 100 %) 9
Specific gravity: 2.05
Flash point: > 93.33 °C (> 199.99 °F)

Section 10. Stability and reactivity

Stability:	Stable under normal conditions of temperature and pressure.
Conditions to avoid:	Elevated temperatures. Heat, flames, sparks and other sources of ignition. Store away from incompatible materials.
Incompatible materials:	Oxidizing agents. Organic acids. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion. Sodium hypochlorite. This product slowly corrodes copper, aluminum, zinc and galvanized surfaces.
Hazardous decomposition products:	Thermal decomposition can lead to release of irritating gases and vapors. carbon monoxide Carbon dioxide. Oxides of nitrogen.
Hazardous polymerization:	None under normal processing.

Section 11. Toxicological information

Health Effects:

Ingestion: If ingested, severe burns of the mouth and throat may occur, as well as perforation of the esophagus and the stomach.

Skin: Causes skin burns.
May cause allergic skin reaction.

Eyes: Causes serious eye damage.

Inhalation: Mists, vapors or liquid may cause severe irritation or burns.
Abrasion of cured material such as by sanding or grinding could release respirable particles of silica quartz, a cancer hazard by inhalation. Normal use of this product causes no such release.

Aggravated med. condition: Eye, skin, and respiratory disorders.

Acute toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Aluminium oxide - non fibrous form 1344-28-1	LD50	> 10,000 mg/kg	oral		rat	equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity)
Silicon carbide 409-21-2	LD50 LD50	> 2,000 mg/kg > 2,000 mg/kg	oral dermal		rat rat	OECD Guideline 423 (Acute Oral toxicity) OECD Guideline 402 (Acute Dermal Toxicity)
N,N'-bis(3-aminopropyl)ethylenediamine 10563-26-5	LD50 Acute toxicity estimate (ATE)	1,140 mg/kg 300 mg/kg	oral dermal		rat	BASF Test Expert judgement
Talc 14807-96-6	LD50 LC50 LD50	> 5,000 mg/kg > 2.1 mg/l > 2,000 mg/kg	oral inhalation dermal	4 h	rat rat rat	OECD Guideline 423 (Acute Oral toxicity) OECD Guideline 403 (Acute Inhalation Toxicity) OECD Guideline 402 (Acute Dermal Toxicity)
3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9	LD50 Acute toxicity estimate (ATE) LD50	3,160 mg/kg 2,500 mg/kg > 2,150 mg/kg	oral dermal dermal		rat rat	OECD Guideline 401 (Acute Oral Toxicity) Expert judgement equivalent or similar to OECD Guideline 402 (Acute Dermal Toxicity)
Silicon dioxide, crystalline 7631-86-9	LD50 LC50 LD50	> 5,000 mg/kg > 5.01 mg/l > 5,000 mg/kg	oral inhalation dermal	4 h	rat rat rabbit	OECD Guideline 401 (Acute Oral Toxicity) OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class (ATC) Method) not specified
p-toluenesulphonic acid (containing a maximum of 5 % H_2SO_4) 104-15-4	LD50	1,410 mg/kg	oral		rat	OECD Guideline 401 (Acute Oral Toxicity)
Magnesium oxide 1309-48-4	LD50 LD50	> 5,000 mg/kg > 2,000 mg/kg	oral dermal		rat rabbit	not specified not specified
Calcium oxide 1305-78-8	LD50 LC50 LD50	> 2,000 mg/kg > 6.04 mg/l > 2,500 mg/kg	oral inhalation dermal	4 h	rat rat rabbit	OECD Guideline 425 (Acute Oral Toxicity: Up-and-Down Procedure) OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class (ATC) Method) OECD Guideline 402 (Acute Dermal Toxicity)
Silica, amorphous, fumed, cryst.-free 112945-52-5	LD50 LC0 LD50	> 5,000 mg/kg 0.139 mg/l > 2,000 mg/kg	oral inhalation dermal	4 h	rat rat rabbit	OECD Guideline 401 (Acute Oral Toxicity) not specified OECD Guideline 402 (Acute Dermal Toxicity)
salicylic acid 69-72-7	LD50 LD50	891 mg/kg > 2,000 mg/kg	oral dermal		rat rat	equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity) OECD Guideline 402 (Acute Dermal Toxicity)

N-(2-aminoethyl)-1,3-propanediamine 13531-52-7	LD50 LD50	654 mg/kg 184 mg/kg	oral dermal		rat rabbit	OECD Guideline 401 (Acute Oral Toxicity) OECD Guideline 402 (Acute Dermal Toxicity)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	LD50 LC50 Acute toxicity estimate (ATE) LD50	2,295 mg/kg 1.49 - 2.44 mg/l 1.49 mg/l > 2,000 mg/kg	oral inhalation inhalation dermal	4 h	rat rat rat	EPA OPPTS 870.1100 (Acute Oral Toxicity) EPA OPPTS 870.1300 (Acute inhalation toxicity) Expert judgement EPA OPPTS 870.1200 (Acute Dermal Toxicity)

Skin corrosion/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Aluminium oxide - non fibrous form 1344-28-1	not irritating	24 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Silicon carbide 409-21-2	not irritating	24 h	rat	other guideline:
N,N'-bis(3-aminopropyl)ethylenediamine 10563-26-5	Sub-Category 1B (corrosive)		rabbit	equivalent or similar to OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Talc 14807-96-6	slightly irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9	Sub-Category 1B (corrosive)		rabbit	equivalent or similar to OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Silicon dioxide, crystalline 7631-86-9	not irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
p-toluenesulphonic acid (containing a maximum of 5 % H_2SO_4) 104-15-4	corrosive	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Calcium oxide 1305-78-8	irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Silica, amorphous, fumed, cryst.-free 112945-52-5	not irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
salicylic acid 69-72-7	slightly irritating		rabbit	not specified
N-(2-aminoethyl)-1,3-propanediamine 13531-52-7	Sub-Category 1A (corrosive)	20 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	mildly irritating	4 h	rabbit	EPA OPPTS 870.2500 (Acute Dermal Irritation)

Serious eye damage/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Aluminium oxide - non fibrous form 1344-28-1	not irritating		rabbit	equivalent or similar to OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Talc 14807-96-6	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Silicon dioxide, crystalline 7631-86-9	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Calcium oxide 1305-78-8	Category 1 (irreversible effects on the eye)		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Silica, amorphous, fumed, cryst.-free 112945-52-5	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
salicylic acid 69-72-7	highly irritating		rabbit	Draize Test
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	highly irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

Hazardous components CAS-No.	Result	Test type	Species	Method
Aluminium oxide - non fibrous form 1344-28-1	not sensitising	Draize Test	guinea pig	Landsteiner & Jacobs Method
N,N'-bis(3-aminopropyl)ethylenediamine 10563-26-5	sensitising	Buehler test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
Talc 14807-96-6	not sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4) 104-15-4	not sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
Calcium oxide 1305-78-8	not sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
salicylic acid 69-72-7	not sensitising	Mouse local lymphnode assay (LLNA)	mouse	equivalent or similar to OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
N-(2-aminoethyl)-1,3-propanediamine 13531-52-7	Sub-Category 1A (sensitising)	Buehler test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	Sub-Category 1A (sensitising)	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)

Germ cell mutagenicity:

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Aluminium oxide - non fibrous form 1344-28-1	negative negative positive without metabolic activation positive without metabolic activation	mammalian cell gene mutation assay bacterial reverse mutation assay (e.g Ames test) in vitro mammalian chromosome aberration test in vitro mammalian cell micronucleus test	with and without with and without with and without with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay) equivalent or similar to OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test) equivalent or similar to OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test)
Aluminium oxide - non fibrous form 1344-28-1	negative negative	oral: gavage oral: gavage		rat rat	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) OECD Guideline 475 (Mammalian Bone Marrow Chromosome Aberration Test)
Silicon carbide 409-21-2	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Talc 14807-96-6	negative negative	bacterial reverse mutation assay (e.g Ames test) in vitro mammalian cell transformation assay	with and without without		equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay) equivalent or similar to OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Talc 14807-96-6	negative	oral: gavage		rat	equivalent or similar to OECD Guideline 478 (Genetic Toxicology: Rodent Dominant Lethal Test)
3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9	negative negative negative	in vitro mammalian cell micronucleus test mammalian cell gene mutation assay bacterial reverse mutation assay (e.g Ames test)	with and without with and without with and without		OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test) OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Silicon dioxide, crystalline 7631-86-9	negative negative negative	bacterial reverse mutation assay (e.g Ames test) mammalian cell gene mutation assay in vitro mammalian chromosome aberration test	with and without with and without with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay) OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Silicon dioxide, crystalline 7631-86-9	negative	inhalation		rat	not specified
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4) 104-15-4	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Calcium oxide 1305-78-8	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Silica, amorphous, fumed, cryst.-free 112945-52-5	negative negative negative	bacterial reverse mutation assay (e.g Ames test) in vitro mammalian chromosome aberration test			not specified not specified not specified

		DNA damage and repair assay, unscheduled DNA synthesis in mammalian cells in vitro			
salicylic acid 69-72-7	negative negative negative	bacterial reverse mutation assay (e.g Ames test) in vitro mammalian chromosome aberration test mammalian cell gene mutation assay	with and without with and without with and without		equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay) equivalent or similar to OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test) OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
salicylic acid 69-72-7	negative	oral: gavage		mouse	equivalent or similar to OECD Guideline 475 (Mammalian Bone Marrow Chromosome Aberration Test)

Repeated dose toxicity:

Hazardous components CAS-No.	**Result**	**Route of application**	**Exposure time / Frequency of treatment**	**Species**	**Method**
Aluminium oxide - non fibrous form 1344-28-1	NOAEL=>= 0.075 mg/l	inhalation: dust	6 months6 h/d, 5 d/week	rat	equivalent or similar to OECD Guideline 452 (Chronic Toxicity Studies)
Aluminium oxide - non fibrous form 1344-28-1	NOAEL=113.36 mg/kg	oral: drinking water	364 dAd libitum (daily)	rat	OECD Guideline 452 (Chronic Toxicity Studies)
Talc 14807-96-6	NOAEL=100 mg/kg	oral: feed	101 d7 d/w	rat	equivalent or similar to OECD Guideline 452 (Chronic Toxicity Studies)
3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9	NOAEL=< 100 mg/kg	oral: gavage	59 daysdaily	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
Silicon dioxide, crystalline 7631-86-9	NOAEL=> 4,000 - 4,500 mg/kg	oral: feed	13 weeksdaily	rat	equivalent or similar to OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
Silicon dioxide, crystalline 7631-86-9	NOAEL=1.3 mg/m3	inhalation	13 w6 h/d, 5 d/w	rat	equivalent or similar to OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day)
Calcium oxide 1305-78-8	NOAEL=1,000 mg/kg	oral: gavage	up to 48 consecutive daysdaily	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
salicylic acid 69-72-7	NOAEL=50 mg/kg	oral: feed	2 yearsdaily	rat	not specified

Section 12. Ecological information

General ecological information: Do not empty into drains / surface water / ground water.

Ecotoxicity: H402 Harmful to aquatic life.

Toxicity:

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
Aluminium oxide - non fibrous form 1344-28-1	LC50	Toxicity > Water solubility	Fish	96 h	Salmo trutta	OECD Guideline 203 (Fish, Acute Toxicity Test)
Aluminium oxide - non fibrous form 1344-28-1	EC50	Toxicity > Water solubility	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Aluminium oxide - non fibrous form 1344-28-1	NOEC	Toxicity > Water solubility	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Aluminium oxide - non fibrous form 1344-28-1	EC50	Toxicity > Water solubility	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Aluminium oxide - non fibrous form 1344-28-1	EC0	Toxicity > Water solubility	Bacteria		not specified	not specified
Silicon carbide 409-21-2	EC50	Toxicity > Water solubility	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Silicon carbide 409-21-2	EC50	Toxicity > Water solubility	Algae	72 h	Desmodesmus subspicatus	OECD Guideline 201 (Alga, Growth Inhibition Test)
N,N'-bis(3-aminopropyl)ethylenediamine 10563-26-5	LC50	> 220 - 460 mg/l	Fish	96 h	Leuciscus idus	DIN 38412-15
N,N'-bis(3-aminopropyl)ethylenediamine 10563-26-5	EC50	42.54 mg/l	Daphnia	48 h	Daphnia magna	EU Method C.2 (Acute Toxicity for Daphnia)
N,N'-bis(3-aminopropyl)ethylenediamine 10563-26-5	EC50	> 100 mg/l	Algae	72 h	Desmodesmus subspicatus	OECD Guideline 201 (Alga, Growth Inhibition Test)
N,N'-bis(3-aminopropyl)ethylenediamine 10563-26-5	EC10	93.6 mg/l	Algae	72 h	Desmodesmus subspicatus	OECD Guideline 201 (Alga, Growth Inhibition Test)
N,N'-bis(3-aminopropyl)ethylenediamine 10563-26-5	EC50	720 mg/l	Bacteria	3 h	activated sludge, domestic	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Talc 14807-96-6	LC50	Toxicity > Water solubility	Fish	96 h	Brachydanio rerio (new name: Danio rerio)	OECD Guideline 203 (Fish, Acute Toxicity Test)
3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9	LC50	> 215 - 464 mg/l	Fish	96 h	Leuciscus idus	DIN 38412-15
3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9	EC50	218 mg/l	Daphnia	48 h	Daphnia magna	EU Method C.2 (Acute Toxicity for Daphnia)
3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9	EC50	666 mg/l	Algae	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	DIN 38412-09
3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9	NOEC	15.6 mg/l	Algae	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	DIN 38412-09
3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9	EC10	152.5 mg/l	Bacteria	17 h	Pseudomonas putida	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test)
Silicon dioxide, crystalline 7631-86-9	LC50	> 10,000 mg/l	Fish	96 h	Brachydanio rerio (new name: Danio rerio)	OECD Guideline 203 (Fish, Acute Toxicity Test)

Silicon dioxide, crystalline 7631-86-9	EL50	> 1,000 mg/l	Daphnia	24 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Silicon dioxide, crystalline 7631-86-9	NOELR	10,000 mg/l	Algae	72 h	Desmodesmus subspicatus	OECD Guideline 201 (Alga, Growth Inhibition Test)
Silicon dioxide, crystalline 7631-86-9	EL50	> 10,000 mg/l	Algae	72 h	Desmodesmus subspicatus	OECD Guideline 201 (Alga, Growth Inhibition Test)
Silicon dioxide, crystalline 7631-86-9	EC0	10,000 mg/l	Bacteria	30 min	Pseudomonas putida	DIN 38412, part 27 (Bacterial oxygen consumption test)
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4) 104-15-4	LC50	> 500 mg/l	Fish	96 h	Leuciscus idus melanotus	OECD Guideline 203 (Fish, Acute Toxicity Test)
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4) 104-15-4	EC50	> 1,500 mg/l	Daphnia	24 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4) 104-15-4	EC50	73 mg/l	Algae	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4) 104-15-4	NOEC	44.8 mg/l	Algae	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4) 104-15-4	EC10	240 mg/l	Bacteria	3 h	activated sludge of a predominantly domestic sewage	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Magnesium oxide 1309-48-4	EC50	> 10,000 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Calcium oxide 1305-78-8	LC50	50.6 mg/l	Fish	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
Calcium oxide 1305-78-8	EC50	49.1 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Calcium oxide 1305-78-8	EC50	184.57 mg/l	Algae	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Calcium oxide 1305-78-8	NOEC	48 mg/l	Algae	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Calcium oxide 1305-78-8	EC20	229.2 mg/l	Bacteria	3 h	activated sludge of a predominantly domestic sewage	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Silica, amorphous, fumed, cryst.-free 112945-52-5	LC50	> 10,000 mg/l	Fish	96 h	Brachydanio rerio (new name: Danio rerio)	OECD Guideline 203 (Fish, Acute Toxicity Test)
salicylic acid 69-72-7	LC50	1,370 mg/l	Fish	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
salicylic acid 69-72-7	EC50	870 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
salicylic acid 69-72-7	EC50	> 100 mg/l	Algae	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
salicylic acid 69-72-7	EC50	> 1,000 mg/l	Bacteria	3 h	not specified	OECD Guideline 209 (Activated Sludge, Respiration

						Inhibition Test)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	LC50	168 mg/l	Fish	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	EC50	87.4 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	EC50	8.8 mg/l	Algae	96 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	NOEC	3.1 mg/l	Algae	96 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	EC 50	435 mg/l	Bacteria	3 h		OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)

Persistence and degradability:

Hazardous components CAS-No.	Result	Route of application	Degradability	Method
N,N'-bis(3-aminopropyl)ethylenediamine 10563-26-5	readily biodegradable	aerobic	70 %	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9	not inherently biodegradable	aerobic	< 20 %	OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test)
3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9	not readily biodegradable.	aerobic	0 %	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4) 104-15-4	inherently biodegradable	aerobic	94 %	OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test)
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4) 104-15-4	readily biodegradable	aerobic	79 - 80 %	OECD 301 A - F
salicylic acid 69-72-7	readily biodegradable	aerobic	88.1 %	EU Method C.4-F (Determination of the "Ready" BiodegradabilityMITI Test)
salicylic acid 69-72-7	inherently biodegradable	aerobic	100 %	OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3		aerobic	50 %	OECD Guideline 301 A (new version) (Ready Biodegradability: DOC Die Away Test)

Bioaccumulative potential / Mobility in soil:

Hazardous components CAS-No.	LogPow	Bioconcentration factor (BCF)	Exposure time	Species	Temperature	Method

N,N'-bis(3-aminopropyl)ethylenediamine 10563-26-5		< 0.5	42 d	Cyprinus carpio		OECD Guideline 305 C (Bioaccumulation: Test for the Degree of Bioconcentration in Fish)
N,N'-bis(3-aminopropyl)ethylenediamine 10563-26-5	-1.55				23 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Talc 14807-96-6	-9.4				25 °C	QSAR (Quantitative Structure Activity Relationship)
3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9	-1.25				25 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Silicon dioxide, crystalline 7631-86-9	0.53					QSAR (Quantitative Structure Activity Relationship)
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4) 104-15-4	-0.96				50 °C	EU Method A.8 (Partition Coefficient)
salicylic acid 69-72-7	2.26				20 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	-1.67					not specified

Section 13. Disposal considerations

Waste disposal of product: Dispose of in accordance with local and national regulations.

Disposal for uncleaned package: After use, tubes, cartons and bottles containing residual product should be disposed of as chemically contaminated waste in an authorised legal land fill site or incinerated. Disposal must be made according to official regulations.

Section 14. Transport information

Road and Rail Transport:

Dangerous Goods information:	Classified as Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code).
UN no.:	2735
Proper shipping name:	AMINES, LIQUID, CORROSIVE, N.O.S. (N,N'-Bis(3-aminopropyl)ethylenediamine,3,3'-oxybis(ethyleneoxy)bis(propylamine))
Class or division:	8
Packing group:	II
Emergency Telephone for Chemical Accidents:	Refer to the Australian Emergency Response Guide Book

Marine transport IMDG:

UN no.:	2735
Proper shipping name:	AMINES, LIQUID, CORROSIVE, N.O.S. (N,N'-Bis(3-aminopropyl)ethylenediamine,3,3'-oxybis(ethyleneoxy)bis(propylamine))
Class or division:	8
Packing group:	II
EmS:	F-A ,S-B
Seawater pollutant:	-

Air transport IATA:

UN no.:	2735
Proper shipping name:	Amines, liquid, corrosive, n.o.s. (N,N'-Bis(3-aminopropyl)ethylenediamine,3,3'-oxybis(ethyleneoxy)bis(propylamine))
Class or division:	8
Packing group:	II
Packing instructions (passenger)	851
Packing instructions (cargo)	855

Section 15. Regulatory information

SUSMP Poisons Schedule 5

AIIC: All components are listed or are exempt from listing on the Australian Inventory of Industrial Chemicals or Introduced under AICIS.

Section 16. Other information

Abbreviations/acronyms:

GHS: Globally Harmonized System
CAS: Chemical Abstracts Service
NOAEL: No Observed Adverse Effect Level
LD 50: Lethal Dose 50%
LC 50: Lethal Concentration 50%
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
IMDG: International Maritime Dangerous Goods code
AIIC - Australian Inventory of Industrial Chemicals (AIIC)
AICIS - Australian Industrial Chemicals Introduction Scheme

Reason for issue: Reviewed SDS. Reissued with new date. involved chapters: 1-16

Date of previous issue: 11.03.2020

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