Safety Data Sheet

LOCTITE PC 7228 PART A known as Nordbak Brush Ceramic - White

SDS No. : 165635
V001.3
Date of issue: 26.08.2021

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

Product name: LOCTITE PC 7228 PART A known as Nordbak Brush Ceramic - White

Intended use: Epoxy resin

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

Phone: +61 (3) 9724 6444

Emergency information: 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 irritation	Category 2
Serious eye irritation	Category 2A
Skin sensitizer	Category 1
Acute hazards to the aquatic environment	Category 2
Chronic hazards to the aquatic environment	Category 2

Hazard pictogram:

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.

Precautionary Statement(s):

Prevention:
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
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, eye protection, and face protection.

Response:
P302+P352 IF ON SKIN: Wash with plenty of water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P362 Take off contaminated clothing.
P391 Collect spillage.

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

Dangerous Goods information:
Not classified as Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code).
Exempt under Special Provision AU01: Environmentally Hazardous Substances meeting the descriptions of UN3077 or UN3082 are not subject to this Code when transported by road or rail in;
a) Packagings that do not incorporate a receptacle exceeding 500 kg (L); or
b) Intermediate Bulk Containers.

Section 3. Composition / information on ingredients

General chemical description: Mixture

Identity of ingredients:

Chemical ingredients	CAS-No.	Proportion
reaction product: bisphenol-A-(epichlorhydrin)	25068-38-6	30- < 60 %
Aluminium oxide - non fibrous form	1344-28-1	30- < 60 %
Titanium dioxide	13463-67-7	< 10 %
2,2'-[methylenebis(p-phenyleneoxymethylene)]bisoxirane	2095-03-6	< 1 %

Section 4. First aid measures

Ingestion:
Do not induce vomiting.
Have victim rinse mouth thoroughly with water.
Seek medical advice.

Skin:
Remove contaminated clothing and footwear.
Immediately flush skin with plenty of water (using soap, if available).
Seek medical advice.

Eyes:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek medical advice.
Inhalation:	Move to fresh air. Keep warm and in a quiet place. If adverse health effects develop seek 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.
Particular danger in case of fire:	Closed containers may rupture (due to build up of pressure) when exposed to extreme heat.
Special protective equipment for fire-fighters:	Wear protective equipment. Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA).
Additional fire fighting advice:	In case of fire, keep containers cool with water spray. Collect contaminated fire fighting water separately. It must not enter drains.

Section 6. Accidental release measures

Personal precautions:	Ensure adequate ventilation. Avoid contact with skin and eyes. Wear protective equipment.
Environmental precautions:	Do not empty into drains / surface water / ground water.
Clean-up methods:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Scrape up as much material as possible. Clean residue with soap and water. Store in a closed container until ready for disposal.

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. Wear suitable protective clothing, safety glasses and gloves.
Conditions for safe storage:	Store in sealed original container. Protect against contamination. Store in a cool, dry place. Ensure that storage and workrooms are adequately ventilated. Keep away from heat and direct sunlight.

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				
TITANIUM DIOXIDE 13463-67-7	Inhalable dust.		10				

Engineering controls: Use local exhaust ventilation if the potential for airborne exposure exists.

Eye protection: Wear protective glasses.

Skin protection: Wear suitable protective clothing.
Suitable protective gloves.
Please note that in practice the working life of chemical resistant gloves may be considerably reduced as a result of many influencing factors (e.g. temperature). Suitable risk assessment should be carried out by the end user. If signs of wear and tear are noticed then the gloves should be replaced.

Respiratory protection: Use only in well-ventilated areas.
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: White
Semi-Solid

Odor: Not significant

Specific gravity: 1.743

Flash point: > 93 °C (> 199.4 °F)
(Tagliabue closed cup)

Evaporation rate: Less than butyl acetate.

Vapor density: > 1
(Air = 1)

Solubility in water: Insoluble

VOC content: < 0.1 % < 10 g/l

Section 10. Stability and reactivity

Stability: Stable under normal conditions of temperature and pressure.

Conditions to avoid: Excessive heat.
Danger of decomposition if exposed to heat.

Incompatible materials: Strong oxidizing agents.
Strong Lewis acids.
Strong mineral acids.
Strong bases.
Amines.
Mercaptans.

Hazardous decomposition products: Thermal decomposition can lead to release of irritating gases and vapors.

Carbon monoxide.
Carbon dioxide.

Hazardous polymerization: Will not occur.

Section 11. Toxicological information

Health Effects:

Ingestion: Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Skin: Causes skin irritation.
Symptoms may include redness, edema, drying, defatting and cracking of the skin.
May cause skin sensitization.

Eyes: Causes serious eye irritation.
Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Inhalation: Inhalation of mists/vapors of this product may cause dizziness, nausea, and respiratory tract congestion.

Acute toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6	LD50 LD50	> 2,000 mg/kg > 2,000 mg/kg	oral dermal		rat rat	OECD Guideline 420 (Acute Oral Toxicity) OECD Guideline 402 (Acute Dermal Toxicity)
Aluminium oxide - non fibrous form 1344-28-1	LD50	> 10,000 mg/kg	oral		rat	OECD Guideline 401 (Acute Oral Toxicity)
Titanium dioxide 13463-67-7	LD50 LC50 LD50	> 5,000 mg/kg > 6.82 mg/l >= 10,000 mg/kg	oral inhalation dermal	4 h	rat rat hamster	OECD Guideline 425 (Acute Oral Toxicity: Up-and-Down Procedure) not specified not specified
2,2'-[methylenebis(p-phenyleneoxymethylene)] bisoxirane 2095-03-6	LD50 LD50	> 2,000 mg/kg > 2,000 mg/kg	oral dermal		rat rat	OECD Guideline 420 (Acute Oral Toxicity) OECD Guideline 402 (Acute Dermal Toxicity)

Skin corrosion/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6	not irritating	4 h	rabbit	not specified
Aluminium oxide - non fibrous form 1344-28-1	not irritating	24 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Titanium dioxide 13463-67-7	not irritating	4 h	rabbit	equivalent or similar to OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Aluminium oxide - non fibrous form 1344-28-1	slightly irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Titanium dioxide 13463-67-7	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

Hazardous components CAS-No.	Result	Test type	Species	Method
reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Aluminium oxide - non fibrous form 1344-28-1	not sensitising	Draize Test	guinea pig	Landsteiner & Jacobs Method
Titanium dioxide 13463-67-7	not sensitising	Mouse local lymphnode assay (LLNA)	mouse	equivalent or similar to OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
2,2'-[methylenebis(p-phenyleneoxymethylene)] bisoxirane 2095-03-6	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)

Germ cell mutagenicity:

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 472 (Genetic Toxicology: Escherichia coli, Reverse Mutation Assay)
reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6	negative	oral: gavage		mouse	not specified
Aluminium oxide - non fibrous form 1344-28-1	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Aluminium oxide - non fibrous form 1344-28-1	negative	oral: gavage		rat	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
Titanium dioxide 13463-67-7	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		OECD Guideline 471 (Bacterial Reverse Mutation Assay) OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test) OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Titanium dioxide 13463-67-7	negative	oral: gavage		mouse	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)

Repeated dose toxicity:

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Method
reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6	NOAEL=50 mg/kg	oral: gavage	14 wdaily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
Aluminium oxide - non fibrous form 1344-28-1		inhalation: dust		rat	OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day)
Titanium dioxide 13463-67-7	NOAEL=1,000 mg/kg	oral: gavage	90 ddaily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)

Section 12. Ecological information

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

Ecotoxicity: Toxic to aquatic life with long lasting effects.

Toxicity:

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6	LC50	1.75 mg/l	Fish	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6	EC50	1.7 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6	EC50	> 11 mg/l	Algae	72 h	Scenedesmus capricornutum	OECD Guideline 201 (Alga, Growth Inhibition Test)
reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6	NOEC	4.2 mg/l	Algae	72 h	Scenedesmus capricornutum	OECD Guideline 201 (Alga, Growth Inhibition Test)
reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6	IC50	> 100 mg/l	Bacteria	3 h	activated sludge, industrial	other guideline:
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 (newname: 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 (newname: 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
Titanium dioxide 13463-67-7	LC50	Toxicity > Water solubility	Fish	48 h	Leuciscus idus	OECD Guideline 203 (Fish, Acute Toxicity Test)
Titanium dioxide 13463-67-7	EC50	Toxicity > Water solubility	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Titanium dioxide 13463-67-7	EC50	Toxicity > Water solubility	Algae	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Titanium dioxide 13463-67-7	EC0	Toxicity > Water solubility	Bacteria	24 h	Pseudomonas fluorescens	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test)
2,2'-[methylenebis(p-phenyleneoxymethylene)]bisoxirane 2095-03-6	LC50	> 1 - 10 mg/l	Fish	96 h	not specified	OECD Guideline 203 (Fish, Acute Toxicity Test)
2,2'-[methylenebis(p-phenyleneoxymethylene)]bisoxirane 2095-03-6	EC50	> 1 - 10 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

Persistence and degradability:

Hazardous components CAS-No.	Result	Route of application	Degradability	Method

reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6	not readily biodegradable.	aerobic	5 %	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
2,2'-[methylenebis(p-phenyleneoxymethylene)]bisoxirane 2095-03-6	not readily biodegradable.	aerobic	< 10 %	OECD 301 A - F

Bioaccumulative potential / Mobility in soil:

Hazardous components CAS-No.	LogPow	Bioconcentration factor (BCF)	Exposure time	Species	Temperature	Method
reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6	3.242				25 °C	EU Method A.8 (Partition Coefficient)

Section 13. Disposal considerations

Waste disposal of product: Dispose of according to Federal, State and local governmental 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: Not classified as Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code).
Exempt under Special Provision AU01 : Environmentally Hazardous Substances meeting the descriptions of UN3077 or UN3082 are not subject to this Code when transported by road or rail in;
a) Packagings that do not incorporate a receptacle exceeding 500 kg (L); or
b) Intermediate Bulk Containers.

Marine transport IMDG:

UN no.: 3082
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-A Epichlorhydrin resin)
Class or division: 9
Packing group: III
EmS: F-A ,S-F
Seawater pollutant: Marine pollutant

Air transport IATA:

UN no.:	3082
Proper shipping name:	Environmentally hazardous substance, liquid, n.o.s. (Bisphenol-A Epichlorhydrin resin)
Class or division:	9
Packing group:	III
Packing instructions (passenger)	964
Packing instructions (cargo)	964

Further information for transport:

The transport classifications in this section apply generally to packed and bulk goods alike. For containers with a net volume of no more than 5 L for liquid substances or a net mass of no more than 5 kg for solid substances per individual or inner package, the exemptions SP 375 (ADR), A197 (IATA), 2.10.2.7 (IMDG) may be applied, which can result in a deviation from the transport classification for packed goods.

`Section 15. Regulatory information

SUSMP Poisons Schedule 5

Section 16. Other information

Abbreviations/acronyms:

ADGC - Australian Dangerous Goods Code
IMDG: International Maritime Dangerous Goods code
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
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: 11.08.2016

Disclaimer:

The percentage weight (% w/w) of ingredients is not to be taken as a specification guaranteed by Henkel Australia Pty. Limited, but only as an approximate guide to the content of hazardous ingredients in the material. The information contained herein does not constitute a guarantee by Henkel Australia Pty. Limited concerning the properties of the material.
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Safety Data Sheet

LOCTITE PC 7228 PART B known as Nordbak Brush Ceramic - White

SDS No. : 157262
V001.3
Date of issue: 11.08.2021

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

Product name: LOCTITE PC 7228 PART B known as Nordbak Brush Ceramic - White

Intended use: Epoxy Hardener

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

Phone: +61 (3) 9724 6444

Emergency information: 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	Route of Exposure	Target organ
Acute toxicity	Category 4	Oral	
Acute toxicity	Category 3	Inhalation	
Acute toxicity	Category 4	Inhalation	
Skin corrosion	Category 1B		
Serious eye damage/eye irritation	Category 1		
Skin sensitizer	Category 1		
Toxic to reproduction	Category 1B		
Target Organ Systemic Toxicant - Repeated exposure	Category 2		Kidneys
Acute hazards to the aquatic environment	Category 3		
Chronic hazards to the aquatic environment	Category 3		

Hazard pictogram:

Signal word: Danger

Hazard statement(s):
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H331 Toxic if inhaled.
H360 May damage fertility or the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

Precautionary Statement(s):

Prevention:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
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.
P281 Use personal protective equipment as required.

Response:
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/… if you feel unwell.
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.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P363 Wash contaminated clothing before reuse.

Storage:
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
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).

Class or division:
8 - Corrosive

Section 3. Composition / information on ingredients

General chemical description: Mixture

Identity of ingredients:

Chemical ingredients	CAS-No.	Proportion
Formaldehyde, polymer with benzenamine, hydrogenated	135108-88-2	30- < 60 %
benzyl alcohol	100-51-6	30- < 60 %
2,2'-iminodiethylamine	111-40-0	5- < 10 %
4,4'-Methylenebis(cyclohexylamine)	1761-71-3	3- < 5 %
4,4'-Isopropylidenediphenol	80-05-7	3- < 10 %
salicylic acid	69-72-7	1- < 3 %
non hazardous ingredients~		<= 10 %

Section 4. First aid measures

Ingestion: Rinse mouth, do not induce vomiting, consult a doctor.

Skin: Rinse with running water and soap.
Seek medical advice.

Eyes: Rinse immediately with plenty of running water (for 10 minutes). Seek medical attention if necessary.

Inhalation: Move to fresh air. If symptoms persist, seek medical advice.

First Aid facilities: Eye wash and safety shower

Section 5. Fire fighting measures

Suitable extinguishing media: Water spray (fog), foam, dry chemical or carbon dioxide.

Improper extinguishing media: High pressure waterjet

Decomposition products in case of fire: Oxides of carbon.
Oxides of nitrogen.
Ammonia.
Phenolics.
Nitric acid.
Aldehydes.
Nitrosamines.
Irritating organic fragments.

Particular danger in case of fire: In case of fire, keep containers cool with water spray.

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

Hazchem code: 2X

Section 6. Accidental release measures

Personal precautions: Avoid skin and eye contact.
Ensure adequate ventilation.
Remove sources of ignition.

Environmental precautions: Do not let product enter drains.

Clean-up methods: Wipe up using absorbent material.
Store in a partly filled, closed container until disposal.

Section 7. Handling and storage

Precautions for safe handling:
Avoid contact with eyes, skin and clothing.
Do not breathe gas/fumes/vapor/spray.
Use only with adequate ventilation.
Keep container closed.
Wash thoroughly after handling.

Conditions for safe storage:
Store in a cool, well-ventilated place.
Keep away from sources of ignition.

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)
DIETHYLENE TRIAMINE 111-40-0		1	4.2				

Engineering controls:
Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

Eye protection:
Wear protective glasses.

Skin protection:
Wear suitable protective clothing.
The use of chemical resistant gloves such as Nitrile is recommended.
Please note that in practice the working life of chemical resistant gloves may be considerably reduced as a result of many influencing factors (e.g. temperature). Suitable risk assessment should be carried out by the end user. If signs of wear and tear are noticed then the gloves should be replaced.

Respiratory protection:
Do not inhale vapors and fumes.
Use only in well-ventilated areas.
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: yellow
liquid
Odor: ammoniacal
Specific gravity: 1.0616
Flash point: 93 °C (199.4 °F)
(Setaflash Closed Cup; ASTM D3828 Method B)
VOC content: < 0.1 % < 1 g/l

Section 10. Stability and reactivity

Stability:
Stable under recommended storage conditions.

Conditions to avoid:
Stable under normal conditions of storage and use.

Incompatible materials: Strong oxidizing agents.
Reducing agents.

Hazardous decomposition products: carbon oxides.

Irritating organic vapours.

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.
Harmful if swallowed.

Skin: Contact with liquid may produce severe skin irritation including redness, inflammation and chemical burns.
May cause skin sensitization.

Eyes: Contact with this product may cause severe eye damage.

Inhalation: Inhalation of vapors or mist can cause severe irritation, tissue and scarring of the respiratory tract.
Toxic by inhalation.

Acute toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	LD50 Acute toxicity estimate (ATE)	300 mg/kg > 2,000 mg/kg	oral dermal		rat rabbit	OECD Guideline 423 (Acute Oral toxicity) Expert judgement
benzyl alcohol 100-51-6	LD50 Acute toxicity estimate (ATE) LC50 Acute toxicity estimate (ATE)	1,620 mg/kg 4.17 mg/l > 4.178 mg/l 2,500 mg/kg	oral inhalation inhalation dermal	 4 h 	rat rat 	not specified Expert judgement OECD Guideline 403 (Acute Inhalation Toxicity) Expert judgement
2,2'-iminodiethylamine 111-40-0	LD50 NOEL Acute toxicity estimate (ATE) LD50	1,553 mg/kg 0.07 mg/l 0.07 mg/l 1,045 mg/kg	oral inhalation inhalation dermal		rat rat rabbit	OECD Guideline 401 (Acute Oral Toxicity) OECD Guideline 403 (Acute Inhalation Toxicity) Expert judgement not specified
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	LD50 LD50	380 mg/kg 2,110 mg/kg	oral dermal		rat rabbit	EPA OPP 81-1 (Acute Oral Toxicity) not specified
4,4'-Isopropylidenediphenol 80-05-7	LD50 Acute toxicity estimate (ATE) LD50	> 2,000 - < 5,000 mg/kg 2,500 mg/kg 3,600 mg/kg	oral oral dermal		 rabbit 	 Expert judgement not specified
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)

Skin corrosion/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	Category 1C (corrosive)		Corrositex Biobarrier Membrane (reconstituted collagen matrix)	OECD Guideline 435 (In Vitro Membrane Barrier Test Method for Skin Corrosion)
benzyl alcohol 100-51-6	not irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
2,2'-iminodiethylamine 111-40-0	corrosive	15 min	rabbit	BASF Test
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	corrosive	2.75 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
salicylic acid 69-72-7	slightly irritating		rabbit	not specified

Serious eye damage/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
benzyl alcohol 100-51-6	irritating	24 h	rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
2,2'-iminodiethylamine 111-40-0	corrosive	30 s	rabbit	not specified
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	Category 1 (irreversible effects on the eye)		rabbit	not specified
salicylic acid 69-72-7	highly irritating		rabbit	Draize Test

Respiratory or skin sensitization:

Hazardous components CAS-No.	Result	Test type	Species	Method
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	sensitising	Buehler test	guinea pig	Buehler test
benzyl alcohol 100-51-6	not sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
2,2'-iminodiethylamine 111-40-0	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
4,4'-Isopropylidenediphenol 80-05-7	not sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 406 (Skin Sensitisation)
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)

Germ cell mutagenicity:

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
benzyl alcohol 100-51-6	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay)
benzyl alcohol 100-51-6	negative	intraperitoneal		mouse	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
2,2'-iminodiethylamine 111-40-0	positive negative	bacterial reverse mutation assay (e.g Ames test) in vitro mammalian chromosome aberration test	with and without with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay) Chromosome Aberration Test
2,2'-iminodiethylamine 111-40-0	negative negative	oral: gavage oral: gavage		mouse mouse	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) not specified
4,4'-Isopropylidenediphenol 80-05-7	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		not specified
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
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	NOAEL=15 mg/kg	oral: gavage	28 ddaily	rat	OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)
benzyl alcohol 100-51-6	NOAEL=400 mg/kg	oral: gavage	13 weeksonce daily, 5 days/week	rat	equivalent or similar to OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
2,2'-iminodiethylamine 111-40-0	NOAEL=70 - 80 mg/kg	oral: feed	90 ddaily	rat	not specified
2,2'-iminodiethylamine 111-40-0	NOAEL=0.55 mg/l	inhalation: vapour	15 d6 h/d	rat	not specified
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	NOAEL=15 mg/kg	oral: gavage	M: 36 d / F: 48-52 ddaily	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., May cause long-term adverse effects in the aquatic environment., Harmful to aquatic organisms.

Toxicity:

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	LC50	96 mg/l	Fish	96 h	Poecilia reticulata	OECD Guideline 203 (Fish, Acute Toxicity Test)
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	EC50	15.4 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	EC10	1.2 mg/l	Algae	72 h	Desmodesmus subspicatus	EU Method C.3 (Algal Inhibition test)
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	EC50	43.94 mg/l	Algae	72 h	Desmodesmus subspicatus	EU Method C.3 (Algal Inhibition test)
benzyl alcohol 100-51-6	LC50	460 mg/l	Fish	96 h	Pimephales promelas	EPA OPP 72-1 (Fish Acute Toxicity Test)
benzyl alcohol 100-51-6	EC50	230 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
benzyl alcohol 100-51-6	EC50	770 mg/l	Algae	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
benzyl alcohol 100-51-6	NOEC	310 mg/l	Algae	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
benzyl alcohol 100-51-6	EC10	658 mg/l	Bacteria	17 h	Pseudomonas putida	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test)
2,2'-iminodiethylamine 111-40-0	LC50	430 mg/l	Fish	96 h	Poecilia reticulata	EU Method C.1 (Acute Toxicity for Fish)
2,2'-iminodiethylamine 111-40-0	NOEC	> 10 mg/l	Fish	28 d	Gasterosteus aculeatus	OECD Guideline 210 (fish early lite stage toxicity test)
2,2'-iminodiethylamine 111-40-0	EC50	64.6 mg/l	Daphnia	48 h	Daphnia magna	EU Method C.2 (Acute Toxicity for Daphnia)
2,2'-iminodiethylamine 111-40-0	EC50	1,164 mg/l	Algae	72 h	Selenastrum capricornutum (newname: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
2,2'-iminodiethylamine 111-40-0	NOEC	10 mg/l	Algae	72 h	Selenastrum capricornutum (newname: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
2,2'-iminodiethylamine 111-40-0	NOEC	6 mg/l	Bacteria	3 h	anaerobic bacteria	not specified
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	LC50	> 100 mg/l	Fish	96 h	Leuciscus idus	DIN 38412-15
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	EC50	7.07 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	EC50	> 140 - 200 mg/l	Algae	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	DIN 38412-09
4,4'-Methylenebis(cyclohexylamine)	EC10	100 mg/l	Algae	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	DIN 38412-09

1761-71-3 4,4'-Methylenebis(cyclohexylamine) 1761-71-3	EC20	> 1,000 mg/l	Bacteria	3 h	activated sludge, industrial	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
4,4'-Isopropylidenediphenol 80-05-7	LC50	4.6 mg/l	Fish	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
4,4'-Isopropylidenediphenol 80-05-7	NOEC	0.016 mg/l	Fish	444 d	Pimephales promelas	EPA OPP 72-5 (Fish Life Cycle Toxicity)
4,4'-Isopropylidenediphenol 80-05-7	EC50	3.9 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
4,4'-Isopropylidenediphenol 80-05-7	EC50	> 2.73 - 3.1 mg/l	Algae	96 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
4,4'-Isopropylidenediphenol 80-05-7	EC10	1.36 mg/l	Algae	96 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
4,4'-Isopropylidenediphenol 80-05-7	EC10	> 320 mg/l	Bacteria	18 h	Pseudomonas putida	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-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)

Persistence and degradability:

Hazardous components CAS-No.	Result	Route of application	Degradability	Method
benzyl alcohol 100-51-6	readily biodegradable	aerobic	92 - 96 %	OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I))
2,2'-iminodiethylamine 111-40-0	inherently biodegradable	aerobic	83 %	EU Method C.9 (Biodegradation: Zahn-Wellens Test)
2,2'-iminodiethylamine 111-40-0	readily biodegradable	aerobic	87 %	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	not readily biodegradable.	aerobic	0 %	OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I))
4,4'-Isopropylidenediphenol 80-05-7	readily biodegradable	aerobic	89 %	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
salicylic acid 69-72-7	readily biodegradable	aerobic	88.1 %	EU Method C.4-F (Determination of the "Ready" Biodegradability MITI Test)
salicylic acid 69-72-7	inherently biodegradable	aerobic	100 %	OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test)

Bioaccumulative potential / Mobility in soil:

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

Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2		18 - 219	56 d	Cyprinus carpio		OECD Guideline 305 C (Bioaccumulation: Test for the Degree of Bioconcentration in Fish)
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	2.68				21 °C	EU Method A.8 (Partition Coefficient)
benzyl alcohol 100-51-6	1.05				20 °C	EU Method A.8 (Partition Coefficient)
2,2'-iminodiethylamine 111-40-0		> 0.3 - < 6.3	42 d	Cyprinus carpio		OECD Guideline 305 C (Bioaccumulation: Test for the Degree of Bioconcentration in Fish)
2,2'-iminodiethylamine 111-40-0	-1.58				20 °C	QSAR (Quantitative Structure Activity Relationship)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3		< 60	60 d	Cyprinus carpio	24 °C	OECD Guideline 305 C (Bioaccumulation: Test for the Degree of Bioconcentration in Fish)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	2.2				23 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
4,4'-Isopropylidenediphenol 80-05-7		5.1 - 67	42 d	Cyprinus carpio	25 °C	other guideline:
4,4'-Isopropylidenediphenol 80-05-7	3.4				21.5 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
salicylic acid 69-72-7	2.26				20 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)

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. (Diethylenetriamine,4,4-methylenebis-cyclohexylamine)
Class or division:	8 - Corrosive
Packing group:	III
Hazchem code:	2X
Emergency information:	Refer to the Australian Emergency Response Guide Book

Marine transport IMDG:

UN no.:	2735
Proper shipping name:	AMINES, LIQUID, CORROSIVE, N.O.S. (Diethylenetriamine,4,4-methylenebis-cyclohexylamine)

Class or division:	8
Packing group:	III
EmS:	F-A ,S-B
Seawater pollutant:	-

Air transport IATA:

UN no.:	2735
Proper shipping name:	Amines, liquid, corrosive, n.o.s. (Diethylenetriamine,4,4-methylenebis-cyclohexylamine)
Class or division:	8
Packing group:	III
Packing instructions (passenger)	852
Packing instructions (cargo)	856

`Section 15. Regulatory information

SUSMP Poisons Schedule 5

Section 16. Other information

Abbreviations/acronyms:

ADGC - Australian Dangerous Goods Code
ASCC - Australian Safety and Compensation Council
SUSMP - Standard for the Uniform Medicines of Medicines and Poisons
STEL - Short term exposure limit
TWA - Time weighted average
AIIC - Australian Inventory of Industrial Chemicals (AIIC)
AICIS - Australian Industrial Chemicals Introduction Scheme

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