Low Strength Threadlocker (222) #908-2733, 908-2764, 908-2789

RS Components

Chemwatch Hazard Alert Code: **3**

Chemwatch: **5224-24**
Version No: **4.1.18.11**
Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements

Issue Date: **30/12/2020**
Print Date: **23/09/2021**
L.GHS.AUS.EN

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

Product Identifier

Product name	Low Strength Threadlocker (222) #908-2733, 908-2764, 908-2789
Chemical Name	Not Applicable
Synonyms	Manufacturer's Code: 908-2733, 908-2764, 908-2789
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains diisopropylnaphthalene and acrylic acid)
Chemical formula	Not Applicable
Other means of identification	Not Available

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

Relevant identified uses	Anaerobic adhesive / sealant. UV/ EB-curing is a drying technology for coatings, inks and adhesives. It uses light of a certain wavelength or high speed electrons to give almost instantaneous dry films. It allows formulators to develop products for a wide variety of applications and substrates without using volatile organic compounds as solvents. It represents therefore a major technological advance compared to other technologies, which may require abatement installations to take care of these compounds, as many of these compounds are able to cause either environmental or health risks if present in a too large concentration.

Details of the supplier of the safety data sheet

Registered company name	**RS Components**
Address	25 Pavesi Street Smithfield NSW 2164 Australia
Telephone	+1 300 656 636
Fax	+1 300 656 696
Website	www.au.rs-online.com
Email	Not Available

Emergency telephone number

Association / Organisation	**CHEMWATCH EMERGENCY RESPONSE**
Emergency telephone numbers	+61 2 9186 1132
Other emergency telephone numbers	+61 1800 951 288

Once connected and if the message is not in your prefered language then please dial 01

SECTION 2 Hazards identification

Classification of the substance or mixture

HAZARDOUS CHEMICAL. DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

ChemWatch Hazard Ratings

		Min	Max
Flammability	1		
Toxicity	2		
Body Contact	3		
Reactivity	1		
Chronic	3		

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

Poisons Schedule	Not Applicable

Page 1 continued...

Classification [1]	Sensitisation (Skin) Category 1, Serious Eye Damage/Eye Irritation Category 1, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, Germ Cell Mutagenicity Category 2, Carcinogenicity Category 1B, Specific Target Organ Toxicity - Repeated Exposure Category 1, Hazardous to the Aquatic Environment Acute Hazard Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 1, Skin Corrosion/Irritation Category 1B
Legend:	*1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI*

Label elements

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

Hazard statement(s)

H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H372	Causes damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.
H314	Causes severe skin burns and eye damage.

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P260	Do not breathe mist/vapours/spray.
P264	Wash all exposed external body areas thoroughly after handling.
P271	Use only a well-ventilated area.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P272	Contaminated work clothing should not be allowed out of the workplace.

Precautionary statement(s) Response

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): 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/physician/first aider.
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.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Precautionary statement(s) Storage

P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s) Disposal

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

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
109-16-0	30-50	triethylene glycol dimethacrylate
38640-62-9	30-50	diisopropylnaphthalene
923-26-2	1-10	2-hydroxypropyl methacrylate

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CAS No	%[weight]	Name
80-15-9	1-10	cumyl hydroperoxide
79-10-7	<1	acrylic acid
99-97-8	<1	N,N-dimethyl-p-toluidine
114-83-0	<1	acetylphenylhydrazine
Legend:	*1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available*	

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▸ Immediately hold eyelids apart and flush the eye continuously with running water. ▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▸ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▸ Transport to hospital or doctor without delay. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin or hair contact occurs: ▸ Immediately flush body and clothes with large amounts of water, using safety shower if available. ▸ Quickly remove all contaminated clothing, including footwear. ▸ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. ▸ Transport to hospital, or doctor.
Inhalation	▸ If fumes or combustion products are inhaled remove from contaminated area. ▸ Lay patient down. Keep warm and rested. ▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▸ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▸ Transport to hospital, or doctor.
Ingestion	▸ For advice, contact a Poisons Information Centre or a doctor at once. ▸ Urgent hospital treatment is likely to be needed. ▸ If swallowed do **NOT** induce vomiting. ▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▸ Observe the patient carefully. ▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▸ Transport to hospital or doctor without delay.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Firefighting measures

Extinguishing media

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

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

Advice for firefighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ May be violently or explosively reactive. ▸ Wear full body protective clothing with breathing apparatus. ▸ Prevent, by any means available, spillage from entering drains or water course. ▸ Fight fire from a safe distance, with adequate cover. ▸ If safe, switch off electrical equipment until vapour fire hazard removed. ▸ Use water delivered as a fine spray to control the fire and cool adjacent area. ▸ Avoid spraying water onto liquid pools. ▸ **Do not** approach containers suspected to be hot. ▸ Cool fire exposed containers with water spray from a protected location. ▸ If safe to do so, remove containers from path of fire.
Fire/Explosion Hazard	▸ Combustible. ▸ Slight fire hazard when exposed to heat or flame. ▸ Heating may cause expansion or decomposition leading to violent rupture of containers. ▸ On combustion, may emit toxic fumes of carbon monoxide (CO). ▸ May emit acrid smoke. ▸ Mists containing combustible materials may be explosive. Combustion products include: carbon dioxide (CO_2) aldehydes nitrogen oxides (NOx) other pyrolysis products typical of burning organic material. **Contains low boiling substance:** Closed containers may rupture due to pressure buildup under fire conditions.

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	WARNING: Long standing in contact with air and light may result in the formation of potentially explosive peroxides.
HAZCHEM	•3Z

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	Environmental hazard - contain spillage. ▸ Clean up all spills immediately. ▸ Avoid breathing vapours and contact with skin and eyes. ▸ Control personal contact with the substance, by using protective equipment. ▸ Contain and absorb spill with sand, earth, inert material or vermiculite. ▸ Wipe up. ▸ Place in a suitable, labelled container for waste disposal.
Major Spills	▸ Clear area of personnel and move upwind. ▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear full body protective clothing with breathing apparatus. ▸ Prevent, by all means available, spillage from entering drains or water courses. ▸ Consider evacuation (or protect in place). ▸ No smoking, naked lights or ignition sources. ▸ Increase ventilation. ▸ Stop leak if safe to do so. ▸ Water spray or fog may be used to disperse / absorb vapour. ▸ Contain or absorb spill with sand, earth or vermiculite. ▸ Collect recoverable product into labelled containers for recycling. ▸ Collect solid residues and seal in labelled drums for disposal. ▸ Wash area and prevent runoff into drains. ▸ After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. ▸ If contamination of drains or waterways occurs, advise emergency services. Environmental hazard - contain spillage.

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

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	▸ Most acrylic monomers have low viscosity therefore pouring, material transfer and processing of these materials do not necessitate heating. ▸ Viscous monomers may require heating to facilitate handling. To facilitate product transfer from original containers, product must be heated to no more than 60 deg. C. (140 F.), for not more than 24 hours. ▸ Do NOT use localised heat sources such as band heaters to heat/ melt product. ▸ Do NOT use steam. ▸ Hot boxes or hot rooms are recommended for heating/ melting material. The hot box or hot room should be set a maximum temperature of 60 deg. C. (140 F.). ▸ Do NOT overheat - this may compromise product quality and /or result in an uncontrolled hazardous polymerisation. ▸ If product freezes, heat as indicated above and mix gently to redistribute the inhibitor. Product should be consumed in its entirety after heating/ melting; avoid multiple "reheats" which may affect product quality or result in product degradation. ▸ Product should be packaged with inhibitor(s). Unless inhibited, product may polymerise, raising temperature and pressure, possibly rupturing container. Check inhibitor level periodically, adding to bulk material if needed. In addition, the product's inhibitor(s) require the presence of dissolved oxygen. Maintain, at a minimum, the original headspace in the product container and do NOT blanket or mix with oxygen-free gas as it renders the inhibitor ineffective. Ensure air space (oxygen) is present during product heating / melting. ▸ Store product indoors at temperatures greater than the product's freeing point (or greater than 0 deg. C. (32 F).) if no freezing point available and below 38 deg. C (100 F.). ▸ Avoid prolonged storage (longer than shelf-life) storage temperatures above 38 deg. C (100 F.). ▸ Store in tightly closed containers in a properly vented storage area away from heat, sparks, open flame, strong oxidisers, radiation and other initiators. ▸ Prevent contamination by foreign materials. ▸ Prevent moisture contact. ▸ Use only non-sparking tools and limit storage time. Unless specified elsewhere, shelf-life is 6 months from receipt. ▸ **DO NOT** allow clothing wet with material to stay in contact with skin ▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area. ▸ Prevent concentration in hollows and sumps. ▸ **DO NOT** enter confined spaces until atmosphere has been checked. ▸ Avoid smoking, naked lights or ignition sources. ▸ Avoid contact with incompatible materials. ▸ When handling, **DO NOT** eat, drink or smoke. ▸ Keep containers securely sealed when not in use. ▸ Avoid physical damage to containers. ▸ Always wash hands with soap and water after handling. ▸ Work clothes should be laundered separately. ▸ Use good occupational work practice. ▸ Observe manufacturer's storage and handling recommendations contained within this SDS. ▸ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions. **Contains low boiling substance:** Storage in sealed containers may result in pressure buildup causing violent rupture of containers not rated appropriately.

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	▸ Check for bulging containers. ▸ Vent periodically ▸ Always release caps or seals slowly to ensure slow dissipation of vapours
Other information	▸ **WARNING**: Decomposition may occur after prolonged storage. ▸ Polymerisation may occur slowly at room temperature. ▸ Storage requires stabilising inhibitor content and dissolved oxygen content to be monitored. Refer to manufacturer's recommended levels. ▸ **DO NOT** overfill containers so as to maintain free head space above product. ▸ Blanketing or sparging with nitrogen or oxygen free gas will deactivate stabiliser. ▸ Store below 38 deg. C. ▸ Store in original containers. ▸ Keep containers securely sealed. ▸ Store in a cool, dry, well-ventilated area. ▸ Store away from incompatible materials and foodstuff containers. ▸ Protect containers against physical damage and check regularly for leaks. ▸ Observe manufacturer's storage and handling recommendations contained within this SDS.

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	▸ Polymerisation may occur slowly at room temperature. ▸ Storage requires stabilising inhibitor content and dissolved oxygen content to be monitored. Refer to manufacturer's recommended levels. ▸ **DO NOT** overfill containers so as to maintain free head space above product. ▸ Blanketing or sparging with nitrogen or oxygen free gas will deactivate stabiliser. ▸ Store below 38 deg. C. for multifunctional acrylates: ▸ Avoid exposure to free radical initiators (peroxides, persulfates) , iron, rust, oxidisers, and strong acids and strong bases. ▸ Avoid heat, flame, sunlight, X-rays or ultra-violet radiation. ▸ Storage beyond expiration date, may initiate polymerisation. Polymerisation of large quantities may be violent (even explosive) ▸ Avoid reaction with oxidising agents ▸ Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	acrylic acid	Acrylic acid	2 ppm / 5.9 mg/m3	Not Available	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
triethylene glycol dimethacrylate	33 mg/m3	360 mg/m3	2,100 mg/m3
diisopropylnaphthalene	5.6 mg/m3	61 mg/m3	370 mg/m3
cumyl hydroperoxide	0.15 ppm	1.6 ppm	9.7 ppm
acrylic acid	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
triethylene glycol dimethacrylate	Not Available	Not Available
diisopropylnaphthalene	Not Available	Not Available
2-hydroxypropyl methacrylate	Not Available	Not Available
cumyl hydroperoxide	Not Available	Not Available
acrylic acid	Not Available	Not Available
N,N-dimethyl-p-toluidine	Not Available	Not Available
acetylphenylhydrazine	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
triethylene glycol dimethacrylate	E	≤ 0.1 ppm
2-hydroxypropyl methacrylate	E	≤ 0.1 ppm
cumyl hydroperoxide	E	≤ 0.1 ppm
N,N-dimethyl-p-toluidine	E	≤ 0.1 ppm
acetylphenylhydrazine	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.*	

MATERIAL DATA

NOTE D: Certain substances which are susceptible to spontaneous polymerisation or decomposition are generally placed on the market in a stabilised form. It is in this form that they are listed on Annex I
When they are placed on the market in a non-stabilised form, the label must state the name of the substance followed by the words "non-stabilised"
European Union (EU) List of harmonised classification and labelling hazardous substances, Table 3.1, Annex VI, Regulation (EC) No 1272/2008 (CLP) - up to the latest ATP

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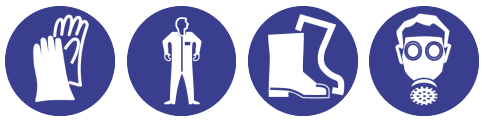
Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. 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. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure. ▸ Employees exposed to confirmed human carcinogens should be authorized to do so by the employer, and work in a regulated area. ▸ Work should be undertaken in an isolated system such as a "glove-box" . Employees should wash their hands and arms upon completion of the assigned task and before engaging in other activities not associated with the isolated system. ▸ Within regulated areas, the carcinogen should be stored in sealed containers, or enclosed in a closed system, including piping systems, with any sample ports or openings closed while the carcinogens are contained within. ▸ Open-vessel systems are prohibited. ▸ Each operation should be provided with continuous local exhaust ventilation so that air movement is always from ordinary work areas to the operation. ▸ Exhaust air should not be discharged to regulated areas, non-regulated areas or the external environment unless decontaminated. Clean make-up air should be introduced in sufficient volume to maintain correct operation of the local exhaust system. ▸ For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood. Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood. ▸ Except for outdoor systems, regulated areas should be maintained under negative pressure (with respect to non-regulated areas). ▸ Local exhaust ventilation requires make-up air be supplied in equal volumes to replaced air. ▸ Laboratory hoods must be designed and maintained so as to draw air inward at an average linear face velocity of 0.76 m/sec with a minimum of 0.64 m/sec. Design and construction of the fume hood requires that insertion of any portion of the employees body, other than hands and arms, be disallowed.
Personal protection	
Eye and face protection	▸ Chemical goggles. ▸ Full face shield may be required for supplementary but never for primary protection of eyes. ▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]
Skin protection	See Hand protection below
Hands/feet protection	▸ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots. **NOTE:** ▸ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. ▸ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: · frequency and duration of contact, · chemical resistance of glove material, · glove thickness and · dexterity Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent). · When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. · Contaminated gloves should be replaced. As defined in ASTM F-739-96 in any application, gloves are rated as: · Excellent when breakthrough time > 480 min · Good when breakthrough time > 20 min · Fair when breakthrough time < 20 min · Poor when glove material degrades For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times. Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers' technical data should always be taken into account to ensure selection of the most appropriate glove for the task. Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example: · Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of. · Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed

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moisturiser is recommended.
General warning: Do NOT use latex gloves! Use only recommended gloves - using the wrong gloves may increase the risk:

Exposure condition Short time use; (few minutes less than 0.5 hour) Little physical stress	Use of thin nitrile rubber gloves: Nitrile rubber (0.1 mm) Excellent tactibility ("feel"), powder-free Disposable Inexpensive Give adequate protection to low molecular weigh acrylic monomers
Exposure condition Medium time use; less than 4 hours Physical stress (opening drums, using tools, etc.)	Use of medium thick nitrile rubber gloves Nitrile rubber, NRL (latex) free; <0.45 mm Moderate tactibility ("feel"), powder-free Disposable Moderate price Gives adequate protection for most acrylates up to 4 hours Do NOT give adequate protection to low molecular weight monomers at exposures longer than 1 hour
Exposure condition Long time Cleaning operations	Nitrile rubber, NRL (latex) free; >0.56 mm low tactibility ("feel"), powder free High price Gives adequate protection for most acrylates in combination with commonly used solvents up to 8 hours Do NOT give adequate protection to low molecular weight monomers at exposures longer than 1 hour Avoid use of ketones and acetates in wash-up solutions.

Where none of this gloves ensure safe handling (for example in long term handling of acrylates containing high levels of acetates and/ or ketones, use laminated multilayer gloves.
Guide to the Classification and Labelling of UV/EB Acrylates Third edition, 231 October 2007 - Cefic

Body protection: See Other protection below

Other protection:
- Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area. [AS/NZS ISO 6529:2006 or national equivalent]
- Employees engaged in handling operations involving carcinogens should be provided with, and required to wear and use half-face filter-type respirators with filters for dusts, mists and fumes, or air purifying canisters or cartridges. A respirator affording higher levels of protection may be substituted. [AS/NZS 1715 or national equivalent]
- Emergency deluge showers and eyewash fountains, supplied with potable water, should be located near, within sight of, and on the same level with locations where direct exposure is likely.
- Prior to each exit from an area containing confirmed human carcinogens, employees should be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers must be identified with suitable labels. For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood.
- Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood.
- Overalls.
- P.V.C apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:
"Forsberg Clothing Performance Index".
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
Low Strength Threadlocker (222) #908-2733, 908-2764, 908-2789

Material	CPI
BUTYL	C
PE	C
SARANEX-23	C
TEFLON	C
VITON	C

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

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

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	A-AUS P2	-	A-PAPR-AUS / Class 1 P2
up to 50 x ES	-	A-AUS / Class 1 P2	-
up to 100 x ES	-	A-2 P2	A-PAPR-2 P2 ^

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

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

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which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used
Avoid inhalation.

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Purple liquid with a perceptible odour; insoluble in water.

Physical state	Liquid	**Relative density (Water = 1)**	1.1
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Available
pH (as supplied)	Not Applicable	**Decomposition temperature**	Not Available
Melting point / freezing point (°C)	Not Applicable	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	>35	**Molecular weight (g/mol)**	Not Applicable
Flash point (°C)	>93	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Not Applicable	**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)	<0.666	**Gas group**	Not Available
Solubility in water	Immiscible	**pH as a solution (%)**	Not Applicable
Vapour density (Air = 1)	Not Available	**VOC g/L**	Not Available

SECTION 10 Stability and reactivity

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

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful. No report of respiratory illness in humans as a result of exposure to multifunctional acrylates has been found. Similarly evidence of systemic damage does not appear to exist.
Ingestion	Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion. Ingestion of organic peroxides may produce nausea, vomiting, abdominal pain, intoxication, cyanosis and severe central nervous system depression. Toxic myocarditis may also occur.
Skin Contact	Skin contact with the material may be harmful; systemic effects may result following absorption. The material can produce chemical burns following direct contact with the skin. All multifunctional acrylates (MFA) produce skin discomfort and are known or suspected skin sensitisers. Aerosols generated in the industrial process are reported to produce dermatitis - vapours generated by the heat of milling may also occur in sufficient concentration to produce dermatitis. Because exposure to industrial aerosols of MFA may also include exposure to various resin systems, photo-initiators, solvents, hydrogen-transfer agents, stabilisers, surfactants, fillers and polymerisation inhibitors, toxic effects may arise due to a range of chemical actions. All organic peroxides are irritating to the skin and if allowed to remain on the skin, may produce inflammation; some are allergenic. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds 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	The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating. When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation. Irritation of the eyes may produce a heavy secretion of tears (lachrymation).
Chronic	Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Gastrointestinal disturbances may also occur. Chronic exposures may result in dermatitis and/or conjunctivitis. Practical experience shows that skin contact with the material is capable either of inducing a sensitisation reaction in a substantial number of individuals, and/or of producing a positive response in experimental animals. Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific airway

Continued...

hyper-responsiveness via an immunological, irritant or other mechanism. Once the airways have become hyper-responsive, further exposure to the substance, sometimes even to tiny quantities, may cause respiratory symptoms. These symptoms can range in severity from a runny nose to asthma. Not all workers who are exposed to a sensitiser will become hyper-responsive and it is impossible to identify in advance who are likely to become hyper-responsive.
Substances than can cuase occupational asthma should be distinguished from substances which may trigger the symptoms of asthma in people with pre-existing air-way hyper-responsiveness. The latter substances are not classified as asthmagens or respiratory sensitisers
Wherever it is reasonably practicable, exposure to substances that can cuase occupational asthma should be prevented. Where this is not possible the primary aim is to apply adequate standards of control to prevent workers from becoming hyper-responsive.
Activities giving rise to short-term peak concentrations should receive particular attention when risk management is being considered. Health surveillance is appropriate for all employees exposed or liable to be exposed to a substance which may cause occupational asthma and there should be appropriate consultation with an occupational health professional over the degree of risk and level of surveillance.
On the basis, primarily, of animal experiments, the material may be regarded as carcinogenic to humans. There is sufficient evidence to provide a strong presumption that human exposure to the material may result in cancer on the basis of:
- appropriate long-term animal studies
- other relevant information
Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
Serious damage (clear functional disturbance or morphological change which may have toxicological significance) is likely to be caused by repeated or prolonged exposure. As a rule the material produces, or contains a substance which produces severe lesions. Such damage may become apparent following direct application in subchronic (90 day) toxicity studies or following sub-acute (28 day) or chronic (two-year) toxicity tests.
Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.
p-Toluidine is a hepatic carcinogen in mice after chronic oral administration but the same doses are not carcinogenic in rats
Most arylamines are powerful haemopoietic poisons producing methaemoglobinaemia in humans.Addition of alkyl groups may modify the toxic responses but nevertheless these remains similar to the parent compound. High chronic doses cause splenic congestion and in turn sarcoma formation. Single ring aromatic amines are relatively weak carcinogens requiring large doses to produce any effect in animal experiments. The polycyclic aromatic amines exhibit a wide range of carcinogenic activity which appear, in part, to be dependent on the position on which benzene rings are substituted and the nature of the substituent.
Most monocyclic arylamines produce haemosiderosis (deposition of iron-containing proteins in tissues and organs). It is not clear whether the genotoxic and acute toxic effects are influenced by the release of iron during methaemoglobin formation or erythrocyte turnover and by the "oxidative stress" associated with these processes. In any case, toxic tissue changes and fibrosis precede tumour development in the spleen, liver and kidneys.
Metabolism of arylamines generally proceeds through N-oxidation, hydroxylation of aromatic ring carbons, and formation of conjugates such as glucuronides, sulfates, and acetates. Ring alkyl substituents may also be oxidised to alcohols and further metabolised to acids. N-oxidation is an important step that can lead to the formation of metabolites that will react with cellular macromolecules. The N-phenylhydroxylamines and nitrosobenzenes produced by N-oxidation are capable of binding to the haeme ion in haemoglobin and causing oxidation. This reaction can produce the methaemoglobinaemia that is the most typical toxicity associated with aromatic amines.
Metabolites of aromatic amines, especially those which have undergone N-hydroxylation appear to be the active principle in the development of bladder cancers .Induced methaemoglobinaemia may be an indicator of the formation of an N-hydroxylated metabolite. Formation of N-hydroxylated metabolites and conjugates thereof is considered to be an important step in the mechanism of activation for various carcinogenic aromatic amines.
Due to methaemoglobin forming activity aromatic amino or nitro compounds may exert developmental toxicity at least as a secondary consequence of maternal toxicity..
N-oxidation leading to the formation of N-hydroxylamines (see above) can further produce reactive nitrosoarenes ultimately leading to the formation of reactive arylnitrenium ions. These in turn may react with skin proteins to produce sensitising effects (as haptens)
Aromatic amines are closely related to catechols and hydroquinones with p-phenylenediamine (PPD) as a prominent example. PPD is a frequently occurring and potent skin sensitizer commonly used in hair dyes. PPD is known to readily autoxidize to a variety of degradation products and p-quinonediimines and semiquinoneimine radicals (known as Würster radicals) are examples of intermediates of potential importance in contact allergy to PPD and related compounds.
In a two-year inhalation study, groups of mice were exposed at 0, 10 or 30 ppm naphthalene, 6 hours/day, 5 days/week for 103 weeks. Female mice showed an increase of pulmonary alveolar/bronchiolar adenomas at 30 ppm. There was no increase in the incidence of tumours in male mice. Naphthalene inhalation was associated with an increase in the incidence and severity of chronic inflammation, metaplasia of the olfactory epithelium, and hyperplasia of the respiratory epithelium in the nose, and chronic inflammation of the lungs of both sexes.
Sensitisation may give severe responses to very low levels of exposure, in situations where exposure may occur.

Low Strength Threadlocker (222) #908-2733, 908-2764, 908-2789	**TOXICITY**	**IRRITATION**
	Not Available	Not Available

triethylene glycol dimethacrylate	**TOXICITY**	**IRRITATION**
	dermal (mouse) LD50: >2000 mg/kg[1]	Eye: no adverse effect observed (not irritating)[1]
	Oral(Mouse) LD50; 10750 mg/kg[2]	Skin: no adverse effect observed (not irritating)[1]

diisopropylnaphthalene	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >4500 mg/kg[2]	Eye: no adverse effect observed (not irritating)[1]
	Inhalation(Rat) LC50; >5.64 mg/l4h[2]	Skin: no adverse effect observed (not irritating)[1]
	Oral(Rat) LD50; 3900-4500 mg/kg[2]	

2-hydroxypropyl methacrylate	**TOXICITY**	**IRRITATION**
	Oral(Rat) LD50; 5050 mg/kg[2]	Eye: adverse effect observed (irritating)[1]
		Skin: no adverse effect observed (not irritating)[1]

cumyl hydroperoxide	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: 129.78 mg/kg[1]	Eye (rabbit): 1 mg
	Inhalation(Mouse) LC50; 200 ppm4h[2]	Skin (rabbit): 500 mg - mild
	Oral(Mouse) LD50; 342 mg/kg[2]	

Continued...

acrylic acid	**TOXICITY** / **IRRITATION** Dermal (rabbit) LD50: >2000 mg/kg[1] / Not Available Inhalation(Rat) LC50; >1.078 mg/l4h[1] Oral(Rat) LD50; 146-468 mg/kg[1]
N,N-dimethyl-p-toluidine	**TOXICITY** / **IRRITATION** Dermal (rabbit) LD50: <935 mg/kg[1] / Not Available Inhalation(Rat) LC50; 1.4 mg/L4h[1] Oral(Mouse) LD50; 139 mg/kg[1]
acetylphenylhydrazine	**TOXICITY** / **IRRITATION** Oral(Mouse) LD50; 270 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*

DIISOPROPYLNAPHTHALENE	A single oral dose toxicity test in rats revealed an LD50 value of more than 2000 mg/kg for bis(1-methylethyl)naphthalene in both sexes. Bis(1-methylethyl)naphthalene was studied for oral toxicity in rats in a 28-day repeat dose toxicity test at doses of 0, 30, 100, 300, and 1000mg/kg/day. Five of the 12 males and 6 of the 12 females died in the 1000 mg/kg group. With regard to general signs, adoption of a lateral position, decrease in locomotor activity, abnormal gait, piloerection, and soiled fur were noted in males of the 1000 mg/kg group, and soiled fur was noted in females of the 1000 mg/kg group. Suppression of body weight gain and decreased food consumption were also noted in both sexes of the 1000 mg/kg group. On hematological examination, the following changes were noted: increases in APTT and PT in males of the 300 mg/kg group; an increase in APTT in females of the 300 mg/kg group; increases in the platelet count, PT, APTT, and fibrinogen concentration and decreases in the red blood cell count and hematocrit in males of the 1000 mg/kg group; and increases in the white blood cell count, APTT, fibrinogen concentration, and neutrophil ratio and a decrease in the lymphocyte ratio in females of the 1000 mg/kg group. On blood chemical examination, the following changes were noted: increases in total cholesterol in females of the 30 and 100 mg/kg groups; an increase in total bilirubin and a decrease in triglyceride in males of the 300 mg/kg group; increases in total bilirubin and total cholesterol in the females of the 300 mg/kg group; increases in GPT, ?-GTP, total bilirubin, and total cholesterol and a decrease in triglyceride in males of the 1000 mg/kg group; and increases in GPT, ?-GTP, total bilirubin, urea nitrogen, creatinine, total cholesterol, and triglyceride in females of the 1000 mg/kg group. At necropsy, hypertrophy of the liver was noted in both sexes of the 300 and 1000 mg/kg groups. With regard to organ weights, the following changes were noted: increases in the absolute and relative liver weights in males of the 100, 300, and 1000 mg/kg groups and in females of the 300 and 1000 mg/kg groups; increased relative kidney weights in males of the 1000 mg/kg group; increased absolute and relative kidney weights in females of the 300 and 1000 mg/kg groups; and increased absolute and relative adrenal weights in females of the 1000 mg/kg group. On histopathological examination, the following changes were noted: centrilobular hypertrophy of hepatocytes in females of the 300 mg/kg group; whole lobular hypertrophy of hepatocytes in males of the 1000 mg/kg group; centrilobular hypertrophy of hepatocytes in both sexes of the 1000 mg/kg group; renal basophilic tubules in males of the 1000 mg/kg group; and neutrophil infiltration in the renal papilla, renal basophililc tubules, and dilatation of renal tubules in females of the 1000 mg/kg group. Therefore, the NOELs for the 28-day repeat dose oral toxicity are considered to be 30 mg/kg/day for males, and less than 30 mg/kg/day for females. Bis(1-methylethyl)naphthalene was not mutagenic in Salmonella typhimurium TA100, TA1535, TA98, TA1537 and Escherichia coli WP2 uvrA, with or without an exogenous metabolic activation system. Bis(1-methylethyl)naphthalene induced structural chromosomal aberrations in CHL cells after short-term treatment with an exogenous metabolic activation system.
2-HYDROXYPROPYL METHACRYLATE	Where no "official" classification for acrylates and methacrylates exists, there has been cautious attempts to create classifications in the absence of contrary evidence. For example Monalkyl or monoarylesters of acrylic acids should be classified as R36/37/38 and R51/53 Monoalkyl or monoaryl esters of methacrylic acid should be classified as R36/37/38 Based on the available oncogenicity data and without a better understanding of the carcinogenic mechanism the Health and Environmental Review Division (HERD), Office of Toxic Substances (OTS), of the US EPA previously concluded that all chemicals that contain the acrylate or methacrylate moiety (CH2=CHCOO or CH2=C(CH3)COO) should be considered to be a carcinogenic hazard unless shown otherwise by adequate testing. This position has now been revised and acrylates and methacrylates are no longer *de facto* carcinogens. for CAS 963-26-2 2-hydroxypropyl methacrylate NOTE: Allergic contact dermatitis is reported following exposure of guinea pigs (mild) and humans (severe). for CAS 27813-02-1 1-hydroxypropyl methacrylate
CUMYL HYDROPEROXIDE	Bacterial cell mutagen Equivocal tumorigen by RTECS criteria The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.
ACRYLIC ACID	For acrylic acid: **Acute toxicity:** Acrylic acid is absorbed via the lungs in animals and humans, absorption via the oral and dermal routes of exposure is demonstrated. In animals with solely nasal respiration, it is resorbed at the nasal mucosa. The extent of absorption depends on pH and solvent with direct dependence on substance concentration. In mice acrylic acid is rapidly and completely metabolised mainly in liver and kidney via the normal catabolic pathways of beta-oxidation. Elimination preferably occurs as carbon dioxide. Pure acrylic acid is a very reactive chemical and accordingly exhibits severe corrosive properties in contact with biological material. Thus, acrylic acid causes acute harmful effects by oral and dermal exposure. Oral LD50 values for rats cover a range from 140 up to 1400 mg/kg bw depending on the concentration of the test substance. An oral LD50 of 1350 mg/kg bw was detected for male rats with a 10% aqueous solution of acrylic acid (pH 2.5) thus indicating that corrosive effects are not caused by the pH of the test substance. A dermal LD50 of 640 mg/kg bw was determined for rabbits (with undiluted acrylic acid). Acute inhalation toxicity is low because acrylic acid interacts with humidity of the air prior to reaching the depth of the respiratory tract. LC50 values of 3.6 to >5.1 mg/l/4 hours have been determined. Workplace data demonstrate that acrylic acid causes skin corrosion and irritation of the respiratory tract in humans. In tests with rabbits the pure acid caused severe burns to skin and eyes. Severe ocular damage caused by acrylic acid cannot be avoided by neutralizing the acid. Pure acrylic acid does not show skin sensitizing properties in animal sensitization tests. However, skin sensitization was observed in humans. This was attributed to oligomeric impurities in the raw material. Respiratory sensitization has not been observed in humans. **Repeat dose toxicity:** Repeated oral and inhalation exposure of acrylic acid to rats and mice resulted in dose related severe effects. Gavage on 90 days revealed dose-dependent mortality, irritation and ulceration of the stomach, and renal tubular necrosis in rats (LOAEL 150 mg/kg bw/d). No specific toxic effects were noted in subchronic and chronic drinking water studies. Reduced palatability (decreased water consumption) and unspecific signs of toxicity (decreased food consumption, body weight gain) at dosages >2000 ppm (100 mg/kg bw/d in male rats, 150 mg/kg bw/d in females) were observed. In a 90-day inhalation study, acrylic acid induced degenerative lesions on the olfactory mucosa in mice at 5 ppm

Continued...

	(0.015 mg/l) and in rats at 75 ppm (0.221 mg/l). Mice seemed to be more sensitive than rats, thus a LOAEC of 5 ppm (0.015 mg/l) was derived for local effects. Long term dermal exposure at concentrations >1 % resulted in skin irritation. **Genotoxicity:** Acrylic acid did not induce gene mutations in Salmonella or CHO cells (HPRT locus) but was clearly positive in the mouse lymphoma assay and in the in vitro chromosomal aberration test. In the mouse lymphoma assay small colonies were induced preferentially, thus the mutagenic potential of acrylic acid seems to be limited to clastogenicity. In vivo, acrylic acid did not induce mutagenic effects in either rat bone marrow cells or mouse germ cells after oral administration. **Carcinogenicity:** There is no evidence that acrylic acid administered orally to rats or applied dermally to mice is carcinogenic. There are no cancer data available with respect to human exposure. **Reproductive and developmental toxicity:** In oral studies on rats no effects on reproductive function (fertility) were observed. Some signs of postnatal developmental toxicity (retarded body weight gain of the pups) were seen following exposure of the parental generation at dose levels that led to reduced food intake and weight gain in the dams. No gross abnormalities were observed in the offspring. No prenatal developmental toxicity was observed in rats and rabbits following inhalation exposure. The material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) thickening of the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. Prolonged contact is unlikely, given the severity of response, but repeated exposures may produce severe ulceration.
N,N-DIMETHYL-P-TOLUIDINE	**WARNING:** This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.
ACETYLPHENYLHYDRAZINE	Tumorigenic - Neoplastic by RTECS criteria.
TRIETHYLENE GLYCOL DIMETHACRYLATE & 2-HYDROXYPROPYL METHACRYLATE & ACETYLPHENYLHYDRAZINE	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. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.
TRIETHYLENE GLYCOL DIMETHACRYLATE & 2-HYDROXYPROPYL METHACRYLATE & CUMYL HYDROPEROXIDE & ACRYLIC ACID & ACETYLPHENYLHYDRAZINE	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

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

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

SECTION 12 Ecological information

Toxicity

Low Strength Threadlocker (222) #908-2733, 908-2764, 908-2789

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

triethylene glycol dimethacrylate

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	72.8mg/l	2
LC50	96h	Fish	16.4mg/l	2
NOEC(ECx)	72h	Algae or other aquatic plants	18.6mg/l	2

diisopropylnaphthalene

Endpoint	Test Duration (hr)	Species	Value	Source
BCF	1440h	Fish	1300-3500	7
LC50	96h	Fish	>0.5mg/l	1
EC50	48h	Crustacea	>0.16mg/l	2
EC50(ECx)	24h	Crustacea	2.3mg/l	1

2-hydroxypropyl methacrylate

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	>97.2mg/l	2
LC50	96h	Fish	833mg/l	2
EC50	48h	Crustacea	>143mg/l	2
NOEC(ECx)	504h	Crustacea	45.2mg/l	2

Continued...

cumyl hydroperoxide

Endpoint	Test Duration (hr)	Species	Value	Source
NOEC(ECx)	96h	Fish	<0.64mg/l	4
LC50	96h	Fish	3.9mg/l	2
EC50	48h	Crustacea	18.84mg/l	2

acrylic acid

Endpoint	Test Duration (hr)	Species	Value	Source
NOEC(ECx)	72h	Algae or other aquatic plants	0.008mg/l	1
ErC50	72h	Algae or other aquatic plants	0.06mg/l	1
EC50	72h	Algae or other aquatic plants	0.04mg/l	1
LC50	96h	Fish	11mg/l	1
EC50	48h	Crustacea	47mg/l	1
EC50	96h	Algae or other aquatic plants	0.17mg/l	1

N,N-dimethyl-p-toluidine

Endpoint	Test Duration (hr)	Species	Value	Source
EC50(ECx)	48h	Crustacea	13.7mg/l	2
EC50	72h	Algae or other aquatic plants	22mg/l	2
LC50	96h	Fish	24.335mg/l	2
EC50	96h	Algae or other aquatic plants	15.481mg/l	2
EC50	48h	Crustacea	13.7mg/l	2

acetylphenylhydrazine

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

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

Very 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.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
triethylene glycol dimethacrylate	LOW	LOW
diisopropylnaphthalene	HIGH	HIGH
2-hydroxypropyl methacrylate	LOW	LOW
cumyl hydroperoxide	LOW (Half-life = 56 days)	LOW (Half-life = 5.42 days)
acrylic acid	HIGH (Half-life = 180 days)	LOW (Half-life = 0.99 days)
N,N-dimethyl-p-toluidine	HIGH	HIGH
acetylphenylhydrazine	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
triethylene glycol dimethacrylate	LOW (LogKOW = 1.88)
diisopropylnaphthalene	LOW (BCF = 203)
2-hydroxypropyl methacrylate	LOW (BCF = 3.2)
cumyl hydroperoxide	LOW (BCF = 35.5)
acrylic acid	LOW (LogKOW = 0.35)
N,N-dimethyl-p-toluidine	LOW (LogKOW = 2.81)
acetylphenylhydrazine	LOW (LogKOW = 0.7365)

Mobility in soil

Ingredient	Mobility
triethylene glycol dimethacrylate	LOW (KOC = 10)
diisopropylnaphthalene	LOW (KOC = 44820)
2-hydroxypropyl methacrylate	LOW (KOC = 10)
cumyl hydroperoxide	LOW (KOC = 2346)
acrylic acid	HIGH (KOC = 1.201)
N,N-dimethyl-p-toluidine	LOW (KOC = 124.8)
acetylphenylhydrazine	LOW (KOC = 70.29)

Continued...

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	▸ Containers may still present a chemical hazard/ danger when empty. ▸ Return to supplier for reuse/ recycling if possible. 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. ▸ Where possible retain label warnings and SDS and observe all notices pertaining to the product. Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: ▸ Reduction ▸ Reuse ▸ Recycling ▸ Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. ▸ **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. ▸ Where in doubt contact the responsible authority. ▸ Recycle wherever possible or consult manufacturer for recycling options. ▸ Consult State Land Waste Authority for disposal. ▸ Bury or incinerate residue at an approved site. ▸ Recycle containers if possible, or dispose of in an authorised landfill.

SECTION 14 Transport information

Labels Required

	
Marine Pollutant	
HAZCHEM	•3Z

Land transport (ADG)

UN number	3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains diisopropylnaphthalene and acrylic acid)
Transport hazard class(es)	Class: 9 Subrisk: Not Applicable
Packing group	III
Environmental hazard	Environmentally hazardous
Special precautions for user	Special provisions: 274 331 335 375 AU01 Limited quantity: 5 L

Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082
are not subject to this Code when transported by road or rail in;
(a) packagings;
(b) IBCs; or
(c) any other receptacle not exceeding 500 kg(L).
- Australian Special Provisions (SP AU01) - ADG Code 7th Ed.

Air transport (ICAO-IATA / DGR)

UN number	3082
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. * (contains diisopropylnaphthalene and acrylic acid)
Transport hazard class(es)	ICAO/IATA Class: 9 ICAO / IATA Subrisk: Not Applicable ERG Code: 9L
Packing group	III
Environmental hazard	Environmentally hazardous

Continued...

Special precautions for user	Special provisions	A97 A158 A197 A215
	Cargo Only Packing Instructions	964
	Cargo Only Maximum Qty / Pack	450 L
	Passenger and Cargo Packing Instructions	964
	Passenger and Cargo Maximum Qty / Pack	450 L
	Passenger and Cargo Limited Quantity Packing Instructions	Y964
	Passenger and Cargo Limited Maximum Qty / Pack	30 kg G

Sea transport (IMDG-Code / GGVSee)

UN number	3082	
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains diisopropylnaphthalene and acrylic acid)	
Transport hazard class(es)	IMDG Class	9
	IMDG Subrisk	Not Applicable
Packing group	III	
Environmental hazard	Marine Pollutant	
Special precautions for user	EMS Number	F-A , S-F
	Special provisions	274 335 969
	Limited Quantities	5 L

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

Not Applicable

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

Product name	Group
triethylene glycol dimethacrylate	Not Available
diisopropylnaphthalene	Not Available
2-hydroxypropyl methacrylate	Not Available
cumyl hydroperoxide	Not Available
acrylic acid	Not Available
N,N-dimethyl-p-toluidine	Not Available
acetylphenylhydrazine	Not Available

Transport in bulk in accordance with the ICG Code

Product name	Ship Type
triethylene glycol dimethacrylate	Not Available
diisopropylnaphthalene	Not Available
2-hydroxypropyl methacrylate	Not Available
cumyl hydroperoxide	Not Available
acrylic acid	Not Available
N,N-dimethyl-p-toluidine	Not Available
acetylphenylhydrazine	Not Available

SECTION 15 Regulatory information

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

triethylene glycol dimethacrylate is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

diisopropylnaphthalene is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

2-hydroxypropyl methacrylate is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5
Australian Inventory of Industrial Chemicals (AIIC)

cumyl hydroperoxide is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)

acrylic acid is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

N,N-dimethyl-p-toluidine is found on the following regulatory lists

Continued...

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5
Australian Inventory of Industrial Chemicals (AIIC)
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

acetylphenylhydrazine is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (triethylene glycol dimethacrylate; 2-hydroxypropyl methacrylate; cumyl hydroperoxide; acrylic acid; N,N-dimethyl-p-toluidine; acetylphenylhydrazine)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (diisopropylnaphthalene; acetylphenylhydrazine)
Vietnam - NCI	Yes
Russia - FBEPH	Yes
Legend:	*Yes = All CAS declared ingredients are on the inventory* *No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.*

SECTION 16 Other information

Revision Date	30/12/2020
Initial Date	20/09/2016

SDS Version Summary

Version	Date of Update	Sections Updated
3.1.1.1	01/11/2019	One-off system update. NOTE: This may or may not change the GHS classification
4.1.1.1	30/12/2020	Classification change due to full database hazard calculation/update.
4.1.2.1	26/04/2021	Regulation Change
4.1.3.1	03/05/2021	Regulation Change
4.1.4.1	06/05/2021	Regulation Change
4.1.5.1	10/05/2021	Regulation Change
4.1.5.2	30/05/2021	Template Change
4.1.5.3	04/06/2021	Template Change
4.1.5.4	05/06/2021	Template Change
4.1.6.4	07/06/2021	Regulation Change
4.1.6.5	09/06/2021	Template Change
4.1.6.6	11/06/2021	Template Change
4.1.6.7	15/06/2021	Template Change
4.1.7.7	17/06/2021	Regulation Change
4.1.8.7	21/06/2021	Regulation Change
4.1.8.8	05/07/2021	Template Change
4.1.9.8	14/07/2021	Regulation Change
4.1.10.8	19/07/2021	Regulation Change
4.1.10.9	01/08/2021	Template Change
4.1.11.9	02/08/2021	Regulation Change
4.1.12.9	05/08/2021	Regulation Change
4.1.13.9	09/08/2021	Regulation Change
4.1.14.9	23/08/2021	Regulation Change
4.1.15.9	26/08/2021	Regulation Change
4.1.15.10	29/08/2021	Template Change
4.1.16.10	30/08/2021	Regulation Change

Continued...

Version	Date of Update	Sections Updated
4.1.17.10	06/09/2021	Regulation Change
4.1.17.11	16/09/2021	Template Change
4.1.18.11	16/09/2021	Regulation Change

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. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit。
IDLH: Immediately Dangerous to Life or Health Concentrations
ES: Exposure Standard
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index
AIIC: Australian Inventory of Industrial Chemicals
DSL: Domestic Substances List
NDSL: Non-Domestic Substances List
IECSC: Inventory of Existing Chemical Substance in China
EINECS: European INventory of Existing Commercial chemical Substances
ELINCS: European List of Notified Chemical Substances
NLP: No-Longer Polymers
ENCS: Existing and New Chemical Substances Inventory
KECI: Korea Existing Chemicals Inventory
NZIoC: New Zealand Inventory of Chemicals
PICCS: Philippine Inventory of Chemicals and Chemical Substances
TSCA: Toxic Substances Control Act
TCSI: Taiwan Chemical Substance Inventory
INSQ: Inventario Nacional de Sustancias Químicas
NCI: National Chemical Inventory
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances