TG50

MATERIAL SAFETY

The information contained within this Technical Data Sheet, details product description, health and safety hazard information of the product and how to safely handle and use the product in the workplace. Also refer to the MSDS for more information. Each user of this product should read the MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products. If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact Demtech Australia Pty Ltd. Demtech Australia Pty Ltd makes no representation as to the completeness and accuracy of the data contained within this data sheet. It is the user's obligation to evaluate and use this product safely, and to comply with all relevant Federal, State and Local Government laws and regulations. Demtech Australia Pty Ltd shall not be responsible for loss, damage or injury resulting from reliance upon or failure to adhere to any recommendation or information contained herein, from abnormal use of the material, or any hazard inherent in the nature of the material.

1. PRODUCT IDENTIFICATION

Product identifier

Product name	Cureflex Top Grit 50 (TG50)
Synonyms	Not available
Other means of identification	Not available

Relevant identified uses of the substance or mixture

Relevant identified uses	Additive to provide slip, mar and abrasion resistance properties

Details of the supplier of the safety data sheet

Registered company name	Demtech Australia Pty Ltd
Address	16 Logis Blvd, Dandenong South VIC 3175 Australia
Telephone	1300 300 090
Fax	Not available
Website	www.demtech.com.au
Email	reception@demtech.com.au

Emergency telephone number

Association/organisation	Not available
Emergency telephone number	Not available
Other emergency telephone	Not available

2. HAZARD IDENTIFICATION

Classification of the substance or mixture

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

Poisons schedule	Not applicable.
Classification	Not applicable.

Hazard statement(s)

Not applicable.

General precautionary statement(s)

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read label before use.

Prevention precautionary statement(s)

Not applicable.

Response precautionary statement(s)

Not applicable.

Storage precautionary statement(s)

Not applicable.

Disposal precautionary statement(s)

Not applicable.

3. PRODUCT COMPOSITION

Composition of mixtures

CAS No	% (weight)	Name
Not available	to 100	Polypropolyne homopolymer - Non hazardous

4. FIRST AID MEASURES

Description of first aid measures

Eye contact

If this product comes in contact with the eyes:
- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Seek medical attention without delay; if pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

For thermal burns:
- DO NOT remove contact lens.
- Lay victim down, on stretcher if available and pad BOTH eyes, make sure dressing does not press on the injured eye by placing thick pads under dressing, above and below the eye.
- Seek urgent medical assistance, or transport to hospital.

Skin contact

If skin or hair contact occurs:
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

In case of burns:
- Immediately apply cold water to burn either by immersion or wrapping with saturated clean cloth.
- DO NOT remove or cut away clothing over burnt areas. DO NOT pull away clothing which has adhered to the skin as this can cause further injury.
- DO NOT break blister or remove solidified material.
- Quickly cover wound with dressing or clean cloth to help prevent infection and to ease pain.
- For large burns, sheets, towels or pillow slips are ideal; leave holes for eyes, nose and mouth.
- DO NOT apply ointments, oils, butter, etc. to a burn under any circumstances.
- Water may be given in small quantities if the person is conscious.
- Alcohol is not to be given under any circumstances.
- Reassure.
- Treat for shock by keeping the person warm and in a lying position.
- Seek medical aid and advise medical personnel in advance of the cause and extent of the injury and the estimated time of arrival of the patient.

For thermal burns:
- Decontaminate area around burn.
- Consider the use of cold packs and topical antibiotics.

For first-degree burns (affecting top layer of skin):
- Hold burned skin under cool (not cold) running water or immerse in cool water until pain subsides.
- Use compresses if running water is not available.
- Cover with sterile non-adhesive bandage or clean cloth.
- Do NOT apply butter or ointments; this may cause infection.
- Give over-the counter pain relievers if pain increases or swelling, redness, fever occur.

For second-degree burns (affecting top two layers of skin):
- Cool the burn by immerse in cold running water for 10-15 minutes.
- Use compresses if running water is not available.
- Do NOT apply ice as this may lower body temperature and cause further damage.
- Do NOT break blisters or apply butter or ointments; this may cause infection.
- Protect burn by cover loosely with sterile, nonstick bandage and secure in place with gauze or tape.

To prevent shock (unless the person has a head, neck, or leg injury, or it would cause discomfort):
- Lay the person flat.
- Elevate feet about 12 inches.
- Elevate burn area above heart level, if possible.
- Cover the person with coat or blanket.
- Seek medical assistance.

4. FIRST AID MEASURES Cont.

Description of first aid measures

Skin contact	For third-degree burns: • Seek immediate medical or emergency assistance. In the mean time: • Protect burn area cover loosely with sterile, nonstick bandage or, for large areas, a sheet or other material that will not leave lint in wound. • Separate burned toes and fingers with dry, sterile dressings. • Do not soak burn in water or apply ointments or butter as this may cause infection. • For an airway burn, do not place pillow under the person's head when the person is lying down. • Have a person with a facial burn sit up. • Check pulse and breathing to monitor for shock until emergency help arrives.
Inhalation	• If fumes, aerosols or combustion products are inhaled remove from contaminated area. • Other measures are usually unnecessary.
Ingestion	• Immediately give a glass of water. • First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Indication of any immediate medical attention and special treatment needed

- Treat symptomatically.

5. FIREFIGHTING MEASURES

Extinguishing media

- DO NOT direct a solid stream of water or foam into burning molten material as this may cause spattering and spread the fire.
- 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. • Wear breathing apparatus plus protective gloves. • Prevent, by any means available, spillage from entering drains or water courses. • Use water delivered as a fine spray to control fire and cool adjacent area. • 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. • Equipment should be thoroughly decontaminated after use.

5. FIREFIGHTING MEASURES Cont.

Advice for firefighters

Fire/explosion hazard

- Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions.
- Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions).
- Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited- particles exceeding this limit will generally not form flammable dust clouds; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion.
- In the same way as gases and vapours, dusts in the form of a cloud are only ignitable over a range of concentrations; in principle, the concepts of lower explosive limit (LEL) and upper explosive limit (UEL) are applicable to dust clouds but only the LEL is of practical use;- this is because of the inherent difficulty of achieving homogeneous dust clouds at high temperatures (for dusts the LEL is often called the “Minimum Explosible Concentration”, MEC).
- When processed with flammable liquids/vapors/mists,ignitable (hybrid) mixtures may be formed with combustible dusts. Ignitable mixtures will increase the rate of explosion pressure rise and the Minimum Ignition Energy (the minimum amount of energy required to ignite dust clouds- MIE) will be lower than the pure dust in air mixture. The Lower Explosive Limit (LEL) of the vapour/dust mixture will be lower than the individual LELs for the vapors/mists or dusts.
- A dust explosion may release of large quantities of gaseous products; this in turn creates a subsequent pressure rise of explosive force capable of damaging plant and buildings and injuring people.
- Usually the initial or primary explosion takes place in a confined space such as plant or machinery, and can be of sufficient force to damage or rupture the plant. If the shock wave from the primary explosion enters the surrounding area, it will disturb any settled dust layers, forming a second dust cloud, and often initiate a much larger secondary explosion. All large scale explosions have resulted from chain reactions of this type.
- Dry dust can be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport.
- Build-up of electrostatic charge may be prevented by bonding and grounding.
- Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.
- All movable parts coming in contact with this material should have a speed of less than 1-meter/sec.
- A sudden release of statically charged materials from storage or process equipment, particularly at elevated temperatures and/ or pressure, may result in ignition especially in the absence of an apparent ignition source.
- One important effect of the particulate nature of powders is that the surface area and surface structure (and often moisture content) can vary widely from sample to sample, depending of how the powder was manufactured and handled; this means that it is virtually impossible to use flammability data published in the literature for dusts (in contrast to that published for gases and vapours).
- Autoignition temperatures are often quoted for dust clouds (minimum ignition temperature (MIT)) and dust layers (layer ignition temperature (LIT)); LIT generally falls as the thickness of the layer increases.

Combustion products include:

- Carbon monoxide (CO).
- Carbon dioxide (CO2).
- Other pyrolysis products typical of burning organic material.

- May emit corrosive fumes.
- Fines were retained in a filter trap upstream of a centrifugal fan after polypropylene powder was conveyed by suction through a duct system as an air dispersion. A relatively course filter however very fine powder to pass and it was eventually retained over a long period in a silencer at the fan outlet. The deposit eventually self-heated and ignited, with the fire spreading very rapidly in the air stream.

5. FIREFIGHTING MEASURES Cont.

Advice for firefighters

Fire/explosion hazard	• A second fire, also apparently with polypropylene powder, occurred in a flash-dryer and cyclone system. Washing the dryer case with water had led to a build-up of aggregated powder which had degraded, melted and ignited. Nitrogen purging was introduced as a preventative measure. • NOTE: Burns with intense heat. Produces melting, flowing, burning liquid and dense acrid black smoke. • CARE: Contamination of heated/molten liquid with water may cause violent steam explosion, with scattering of hot contents.
HAZCHEM	• Not applicable.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See Section 8.

Environmental precautions

See Section 12.

Methods and materials for containment and cleaning up

Minor spills	• Clean up all spills immediately. • Avoid breathing dust and contact with skin and eyes. • Wear protective clothing, gloves, safety glasses and dust respirator. • Use dry clean up procedures and avoid generating dust. • Sweep up, shovel up or vacuum up (consider explosion-proof machines). • Place spilled material in clean, dry, sealable, labelled container.
Major spills	• Moderate hazard. • CAUTION: Advise personnel in area. • Alert Emergency Services and tell them location and nature of hazard. • Control personal contact by wearing protective clothing. • Prevent, by any means available, spillage from entering drains or water courses. • Recover product wherever possible. • IF DRY: Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal. • IF WET: Vacuum/shovel up and place in labelled containers for disposal. • ALWAYS: Wash area down with large amounts of water and prevent runoff into drains. • If contamination of drains or waterways occurs, advise Emergency Services.

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

7. HANDLING & STORAGE

Precautions for safe handling

Safe handling

- The greatest potential for injury caused by molten materials occurs during purging of machinery. It is essential that workers in the immediate area of the machinery wear eye and skin protection (full face, safety glasses, heat resistant gloves, overalls, safety boots) as protection from thermal burns.
- Fumes or vapours emitted from hot melted materials, during converting operations, may condense on overhead metal surfaces or exhaust ducts. The condensate may contain substances which are irritating or toxic. Avoid contact of that material with the skin. Wear rubber or other impermeable gloves when cleaning contaminated areas.
- Avoid process temperatures above decomposition temperatures. Overheating may occur at excessively high cylinder heats, overworking of the melt by wrong screw configuration, or by long dwell time in the machine. Under such conditions, thermal emissions and heat-degradation products might, without proper ventilation, reach hazardous concentrations in the converting area. Hot purgings should be collected only as thin flat strands to allow for rapid cooling. Hot purgings should be cooled by quenching in water in a well-ventilated area.

- 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.
- DO NOT allow material to contact humans, exposed food or food utensils.
- 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.
- Launder contaminated clothing before re-use. Use good occupational work practice.
- Observe manufacturer’s storage and handling recommendations contained within this MSDS.

- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained. Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion.
- Remove dust accumulations on a regular basis by vacuuming or weeping to avoid creating dust clouds. Use continuous suction at points of dust generation to capture and minimise the accumulation of dusts. Particular attention should be given to overhead and hidden horizontal surfaces to minimise the probability of a “secondary” explosion. According to NFPA Standard 654, dust layers 1/32 in (0.8 mm). thick can be sufficient to warrant immediate cleaning of the area.

- Do not use air hoses for cleaning.
- Minimise dry sweeping to avoid generation of dust clouds.
- Vacuum dust-accumulating surfaces and remove to a chemical disposal area.
- Vacuums with explosion-proof motors should be used.
- Control sources of static electricity.
- Do not empty directly into flammable solvents or in the presence of flammable vapors.
- The operator, the packaging container and all equipment must be grounded with electrical bonding and grounding systems. Plastic bags and plastics cannot be grounded, and antistatic bags do not completely protect against development of static charges.

- DO NOT cut, drill, grind or weld such containers.
- Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.
- In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.

7. HANDLING & STORAGE Cont.

Precautions for safe handling

Other information

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry area protected from environmental extremes.
- 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 MSDS.

For major quantities:

- Consider storage in bunded areas and ensure storage areas are isolated from sources of community water (including stormwater, ground water, lakes and streams).
- Ensure that accidental discharge to air or water is the subject of a contingency disaster management plan as this may require consultation with local authorities.

Conditions for safe storage, including any incompatibilities

Suitable container

- Lined metal can, lined metal pail/can.
- Plastic pail.
- Polyliner drum.
- Packing as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

Storage incompatibility

- Polypropylene is liable to chain degradation from exposure to UV radiation such as that present in sunlight. Oxidation usually occurs at the secondary carbon atom present in every repeat unit. A free radical is formed here, and then reacts further with oxygen, followed by chain scission to yield aldehydes and carboxylic acids. In external applications, it shows up as a network of fine cracks and crazes which become deeper and more severe with time of exposure.
- For external applications, UV-absorbing additives must be used. Carbon black also provides some protection from UV attack. The polymer can also be oxidized at high temperatures, a common problem during molding operations. Anti-oxidants are normally added to prevent polymer degradation.
- Avoid reaction with oxidising agents

8. EXPOSURE CONTROLS

Control paramters

Occupational exposure limits

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
Cureflex TG50	Not available	Not available	Not available	Not available

Ingredient	Original IDLH	Revised IDLH
Cureflex TG50	Not available	Not available

8. EXPOSURE CONTROLS Cont.

Exposure controls

Appropriate engineering controls

For molten materials:

- Provide mechanical ventilation. in general such ventilation should be provided at compounding/converting areas and at fabricating/filling work stations where the material is heated. Local exhaust ventilation should be used over and in the vicinity of machinery involved in handling the material.

Processing temperatures may be well above boiling point of water, so wet or damp material may cause a serious steam explosion if used in unvented equipment. 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.

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying “escape” velocities which, in turn, determine the “capture velocities” of fresh circulating air required to effectively remove the contaminant.

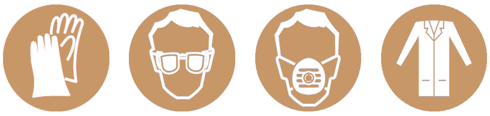
Type of contaminant	Air speed
Solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min)
Aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation).	0.5-1 m/s (100-200 f/min)
Direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion).	1-2.5 m/s (200-500 f/min)
Grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
Room air currents minimal or favourable	Disturbing room air currents
Contaminants of low toxicity or nuisance	Contaminants of high toxicity
Intermittent, low production	High production, heavy use
Large hood or large air mass in motion	Small hood-local control only

8. EXPOSURE CONTROLS Cont.

Exposure controls

Appropriate engineering controls	Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 4-10 m/s (800-2000 f/min.) for extraction of solvents generated by spraying at a point 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed.
Personal protection	
Eye and face protection	• Safety glasses with side shields. • Chemical goggles. • 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.
Hand/feet protection	• Wear chemical protective gloves, e.g. PVC. • Wear safety footwear or safety gumboots, e.g. rubber. 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. Important factors in the selection of gloves include: • Frequency and duration of contact. • Chemical resistance of glove material. • Glove thickness. • Dexterity. Select gloves tested to a relevant standard: • 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. 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.

8. EXPOSURE CONTROLS Cont.

Exposure controls

Hand/feet protection

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.

Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks.
- 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 moisturiser is recommended. When handling hot materials wear heat resistant, elbow length gloves. Rubber gloves are not recommended when handling hot objects, materials Protective gloves eg. Leather gloves or gloves with leather facing.

Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.
- Polychloroprene.
- Nitrile rubber.
- Butyl rubber.
- Fluorocaoutchouc.
- Polyvinyl chloride.

Gloves should be examined for wear and/or degradation constantly.

Body protection

See other protection below

Other protection

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

- When handling hot/molten liquids, wear trousers/overalls outside of boots, to avoid spills entering.
- Usually handled as molten liquid which requires worker thermal protection and increases hazard of vapour exposure. CAUTION: Vapours may be irritating.

8. EXPOSURE CONTROLS Cont.

Respiratory protection

- Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure. Ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- Use approved positive flow mask if significant quantities of dust becomes airborne.
- Try to avoid creating dust conditions.

Required minimum protection factor	Half-face respirator	Full-face respirator	Powered air respirator
Up to 10 x ES	A P1 Air-line*		A PAPR-P1
Up to 50 x ES	Air-line**	A P2	A PAPR-P2
Up to 100 x ES		A P3	
100+ x ES		Air-line* Air-line**	A PAPR-P3

- * = Negative pressure demand.
- ** = Continuous flow.
- 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 °C).

9. PHYSICAL & CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	White powder	Relative density (water = 1)	0.90
Physical state	Divided solid (powder)	Partition coefficient	Not available
Odour	Not available	Auto-ignition temperature (°C)	Not available
Odour threshold	Not available	Decomposition temperature	Not available
pH (as supplied)	Not available	Viscosity (cSt)	Not available
Melting/freezing point (°C)	166	Molecular weight (g/mol)	Not available
Boiling point/range (°C)	Not available	Taste	Not available
Flash point (°C)	>227	Explosive properties	Not available
Evaporation rate	Not available	Oxidising properties	Not available
Flammability	Not available	Surface tension (dyn/cm or mN/m)	Not available
Upper explosive limit (%)	Not available	Volatile component (%vol)	Not available
Lower explosive limit (%)	Not available	Gas group	Not available
Vapour pressure (kpa)	Not available	pH as a solution (1%)	Not available
Solubility in water	Immiscible	VOC g/l	Not available
Vapour density (air = 1)	Not available		

10. STABILITY & REACTIVITY

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

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Processing for an overly long time or processing at overly high temperatures may cause generation and release of highly irritating vapours, which irritate eyes, nose, throat, causing red itching eyes, coughing, sore throat. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled. If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.
Ingestion	• The material has NOT been classified by EC Directives or other classification systems as “harmful by ingestion”. This is because of the lack of corroborating animal or human evidence. • High molecular weight material. On single acute exposure would be expected to pass through gastrointestinal tract with little change/absorption. • Occasionally accumulation of the solid material within the alimentary tract may result in formation of a bezoar (concretion), producing discomfort.
Skin contact	• The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. • Molten material is capable of causing burns. • Open cuts, abraded or irritated skin should not be exposed to this material • Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Eye	There is evidence to suggest that this material can cause eye irritation and damage in some persons.
Chronic	• Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models). Nevertheless exposure by all routes should be minimised as a matter of course. • Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis, caused by particles less than 0.5 micron penetrating and remaining in the lung. • This material contains a substantial amount of polymer considered to be of low concern. These are classified under having MWs of between 1000 to 10000 with less than 25% of molecules with MWs under 1000 and less than 10% under 500 or having a molecular weight average of over 10000. • There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.

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 available to make classification.
✗ Data either not available or does not fill the criteria for classification.

12. ECOLOGICAL INFORMATION

Toxicity

Endpoint	Test duration (hr)	Species	Value	Source
Not available	Not available	Not available	Not available	Not available

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.

Non-ionic polymers with MWs> 1,000 that do not contain reactive functional groups and are comprised of minimal low MW oligomers are estimated to display no effects at saturation (NES). These polymers display NES because the amount dissolved in water is not anticipated to reach a concentration at which adverse effects may be expressed. Guidance for the assessment of aquatic toxicity hazard results in a Low hazard designation for those materials that display NES.

High MW polymers are expected too have low vapour pressure and are not expected to undergo volatilization, to adsorb strongly to soil and sediment and to be non-biodegradable (not anticipated to be assimilated by microorganisms.- therefore, biodegradation is not expected to be an important removal process. However many exceptions exist. High MW polymers are not expected to undergo removal by other degradative processes under environmental conditions.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
No data available	No data available	No data available

Bioaccumulative potential

Ingredient	Bioaccumulation
No data available	No data available

Mobility in soil

Ingredient	Mobility
No data available	No data available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Product/packaging disposal:

- 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 and 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.

14. TRANSPORT INFORMATION

Labels required

Marine pollutant	No
HAZCHEM	Not applicable

- Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS.
- Air transport (ICAO-IATA/DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS.
- Sea transport (IMDG-Code/GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS.
- Transport in bulk according to Annex II of MARPOL and the IBC Code: Not applicable.

15. REGULATORY INFORMATION

National inventory status

National Inventory	Status
Australia - AICS	Yes
Canada - DSL	Yes
Canada - NDSL	No
China - IECSC	Yes
Europe - EINEC/ELINCS/NLP	No
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - ARIPS	Yes

Legend: Yes = All CAS declared ingredients are on the inventory.
No = Not determined or one or more ingredients are not on the inventory and are not exempt from listing.

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
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: Bio-concentration Factors
BEI: Biological Exposure Index