SAFETY DATA SHEET

MAKSEAL INDUSTRIAL GRADE SILICONE

Makrete Pty Ltd

Version No: 1.0 Issue Date: Apr 2023

GHS 7

SECTION 1 MATERIAL AND SUPPLY COMPANY IDENTIFICATION

Product Identifier

Product Name	Makseal Industrial Grade Silicone

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

Relevant Identified uses	Silicone sealant.

Details of the supplier of the safety data sheet

Registered Company Name	Makrete Pty Ltd
Address	PO Box 50, Montmorency, VIC 3094
Telephone	1300 911 161
Website	www.makrete.com.au
Email	admin@makrete.com.au

Emergency telephone number

Emergency Telephone Numbers	1300 911 161
Other emergency telephone numbers	

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

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

Poisons Schedule	Not Applicable
Classification	Flammable Liquid Category 4, Eye Irritation Category 2A, Skin Sensitiser Category 1

Label elements

Hazard pictogram(s)	

SIGNAL WORD	**WARNING**

Hazard statement(s)

H227	Combustible liquid.
H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.

Precautionary statement(s) Prevention

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P261	Avoid breathing mist/vapours/spray.
P272	Contaminated work clothing should not be allowed out of the workplace.

Precautionary statement(s) Response

P363	Wash contaminated clothing before reuse.
P370 + P378	In case of fire: Use alcohol resistant foam or normal protein foam for extinction.
P302 + P352	**IF ON SKIN:** Wash with plenty of soap and water.
P305+P351+P338	**IF IN EYES**: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.

Precautionary statement(s) Storage

P403 + P235	Store in a well=ventilated place. Keep cool.

Precautionary statement(s) Disposal

P501	Dispose of contents/container in accordance with local regulations.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures.

Chemical Entity

CAS No	%[weight]	Name
22984-54-9	1-3	methyltri(methylethylketoxime)silane
96-29-7	<1	methyl ethyl ketoxime
1760-24-3	<1	N-[3-(trimethoxy silyl)propyl]ethylenediamine
2224-33-1	<1	vinyltris(methylethylketoxime)silane
556-67-2	<0.2	octamethylcyclotetrasiloxane
Not Available	Balance	Additive, proprietary

SECTION 4 FIRST AID MEASURES

Description of First Aid Measures

Eye Contact	If this product encounters 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. Seek medical attention without delay; if pain persists or recurs seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	**If skin contact occurs:** Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation.
Inhalation	If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary.
Ingestion	If swallowed do **NOT** induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Observe the patient carefully. Never give liquid to a person showing signs of being sleepy or with reduced awareness, i.e. becoming unconscious. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Seek medical advice.

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 of 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 t ell 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.
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 acrid smoke. Mists containing combustible materials may be explosive. Combustion products include: Carbon Dioxide (CO_2) Nitrogen Oxides (NO_x) Silicon Dioxide (SiO_2) Other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes.
HAZCHEM	Not Applicable

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8.

Environmental precautions

See section 12.

Minor Spills	Clean up all spills immediately. Avoid contact with skin and eyes. Wear impervious gloves and safety glasses. Trowel up/scrape up. Place spilled material in clean, dry and sealed container. Flush spill area with water.
Major Spills	Minor hazard. Clear area of personnel. Alert Fire Brigade and tell them location and nature of hazard. Control personal contact with the substance, by using protective equipment as required. Prevent spillage from entering drains or water ways. Contain spill with sand, earth or vermiculite. Collect recoverable product into labelled containers for recycling. Absorb remaining product with sand, earth or vermiculite and place in appropriate containers for disposal. Wash area and prevent runoff into drains or waterways. If contamination of drains or waterways occurs, advise emergency services.

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

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe Handling	Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well- ventilated area. 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 SDS. Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
Other information	Store in original containers. Keep containers securely sealed. No smoking, naked lights or ignition sources. 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. Packing as recommended by manufacturer. Check all containers are clearly labelled and free from leaks.
Storage Incompatibility	Avoid reaction with oxidising agents. Avoid strong acids, bases.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Not Available

EMERGENCY LIMITS

Ingredient	Material Name	TEEL-1	TEEL-2	TEEL-3
methyl ethyl ketoxime	Butanone oxime; (Ethyl methyl ketoxime)	30 ppm	56 ppm	250 ppm
N-[3-(trimethoxy silyl)propyl]ethylenediamine	Trimethoxysilylpropyl) ethylenediamine, N-(3-	23 mg/m3	250 mg/m3	1,500 mg/m3
octamethylcyclotetrasiloxane	Octamethylcyclotetrasiloxane	30 ppm	68 ppm	130 ppm

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. The design of a ventilation system must match the process and chemical or contaminant in use.
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.
Hands/Feet protection	Wear chemical protective gloves. e.g., PVC Wear safety footwear or safety gumboots, e.g., Rubber **NOTE:** The material may produce skin sensitisation in predisposed individuals. Care must be taken when removing gloves and other protective equipment, to avoid all possible skin contact. Contaminated leather items, such as shoes, belts and watchbands should be removed and destroyed.
Body protection	See Other protection below.
Other protection	Overalls Barrier Cream PVC Apron Skin Cleansing Cream Eye Wash Unit
Thermal hazards	Not Available

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Paste with oxime odour. Available in various colours – Translucent, White, Matt Black, Grey and Aluminium Grey		
Physical state	Non-Slump Paste	**Relative density (Water = 1)**	1.03
Odour	Not Available	**Partition coefficient n-octanol/water**	Not Available
Odour Threshold	Not Available	**Auto-ignition temperature (°C)**	Not Available
pH (as supplied)	Not Available	**Decomposition temperature**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	Not Available	**Molecular Weight (g/mol)**	Not Applicable
Flash point (°C)	96°C (CC)	**Taste**	Not Available
Evaporation rate	<1 BuAC = 1	**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)	Not Available	**Gas Group**	Not Available
Solubility in water (g/L)	Immiscible	**pH as a solution (1%)**	Not Applicable
Vapour density (Air = 1)	>1	**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	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.
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. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g., liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.
Skin Contact	Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions. Open cuts abraded or irritated skin should not be exposed to this material. Entry into the bloodstream 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	Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.
Chronic	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. Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. On the basis, primarily, of animal experiments, concern has been expressed by at least one classification body that the material may produce carcinogenic or mutagenic effects; in respect of the available information, however, there presently exists inadequate data for making a satisfactory assessment. Limited evidence shows that inhalation of the material can induce a sensitisation reaction in a significant number of individuals at a greater frequency than would be expected from the response of a normal population. Pulmonary sensitisation, resulting in hyperactive airway dysfunction and pulmonary allergy may be accompanied by fatigue, malaise and aching. Significant symptoms of exposure may persist for extended periods, even after exposure ceases. Symptoms can be activated by a variety of nonspecific environmental stimuli such as automobile exhaust, perfumes and passive smoking.

	TOXICITY	IRRITATION
Makseal Industrial Grade Silicone	Not Available	Not Available
methyltri(methylethylketoxime)silane	dermal (rat) LD50: >2000 mg/kg[1]	Eye: adverse effect observed (irritating) [1]
	Oral (rat) LD50: ~ 2260	Skin: no adverse effect observed)not irritating) [1]
methyl ethyl ketoxime	dermal (rabbit) LD50: 2-1.8 mg/kg[2]	Eye (rabbit): 0.1 ml - SEVERE
	Inhalation (rat) LC50: 20 mg/l/4h**[2]	
	Oral (rat) LD50: >900 mg/kg[1]	
N-[3-(trimethoxysilyl)propyl]ethylenediamine	dermal (rat) LD50: >2009 mg/kg[1]	Eye (rabbit): 15 mg - SEVERE
	Oral (rat) LD50: 1897 mg/kg[1]	Eye: adverse effect observed (irreversible damage)[1]
		Skin (rabbit): 500mg mild
		Skin: no adverse effect observed (not irritating)[1]
vinyltris(methylethylketoxime)silane	dermal (rat) LD50: >2009 mg/kg[1]	Eye: adverse effect observed (irritating)[1]
	Oral (rat) LD50: >2000 mg/kg[1]	Skin: no adverse effect observed (not irritating)[1]
octamethylcyclotetrasiloxane	dermal (rat) LD50: 1770 mg/kg[2]	Eye (rabbit): 500 mg/24h - mild
	Inhalation (rat) LC50: 36 mg/l/4Hd[2]	Eye: no adverse effect observed (not irritating)[1]
	Oral (rat) LD50: 1540 mg/kg[2]	Skin (rabbit): 500 mg/24h - mild
		Skin: adverse effect observed (irritating)[1]
		Skin: no adverse effect observed (not irritating)[1]
LEGEND:	*1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances*	

METHYLTRI(METHYLETHYLKETOXIME)SILANE	alpha,beta-Unsaturated oximes represent two previously unknown classes of prohaptens.Three putative metabolites were proposed as sensitising agents. These included two diastereometric alpha,beta-epoxy oximes and a nitro analogue. When tested in the LLNA,alpha,beta-epoxy oximes. Allergic Contact Dermatitis—Formation, Structural Requirements,and Reactivity of Skin Sensitizers. Ann-Therese Karlberg et al: Chem. Res. Toxicol. 2008, 21, pp 53–69 http://ftp.cdc.gov/pub/Documents/OEL/06.%20Dotson/References/Karlberg_2008.pdf

METHYL ETHYL KETOXIME	For methyl ethyl ketoxime (MEKO) **Carcinogenicity:** Increased incidences of liver tumours were observed in rat and mouse lifetime studies and there was also an increased incidence of mammary gland tumours in female rats, however, this was only seen at mid- and/or high concentrations of MEKO. Consideration of the available information regarding genotoxicity indicate that MEKO is not likely to be genotoxic. Accordingly, although the mode of induction of tumours is not fully elucidated, the tumours observed are not considered to have resulted from direct interaction with genetic material. The European Commission (2000) considered that a possible mechanism for the increased incidences of liver tumours in male rats and mice was the metabolism of MEKO to a carcinogenic agent, mediated by sulfotransferase. The sex and organ specificity of tumour formation correlated with the typically higher activity of this enzyme in male rodents. **Genotoxicity:** The *in vitro* and *in vivo* genotoxicity results for MEKO were mostly negative, including an *in vivo* study that utilized inhalation exposure and was found to be negative for DNA adducts in rat liver cells. Therefore, based on the available data, MEKO appears to lack mutagenic potential. **Repeat dose toxicity:** Non-neoplastic effects were also observed in the nasal cavity of rats and/or mice in inhalation studies of short-term through to chronic exposure. Also, repeated dose studies based on oral exposure showed effects in the spleen, liver and kidney of rats as well as haematological effects in both rats and rabbits. **Reproductive toxicity**: In a one-generation oral rat study, the LOAEL for reproductive toxicity was 100 mg/kg-bw per day, the highest dose, based on a statistically significant decrease in female delivery index (%) , whereas no treatment-related effects on reproductive parameters were observed in a two-generation study in which rats were dosed by gavage at 0-200 mg/kg-bw per day In both the one-generation and two-generation rat studies, a parental LOAEL of 10 mg/kg-bw per day, the lowest dose tested, was established, based on histopathological effects in the spleen and liver (and in the kidney in the one-generation study). **Developmental toxicity:** Teratogenicity was not observed in pregnant rats and rabbits dosed orally with MEKO during gestation. The lowest oral LOAEL for developmental toxicity was 40 mg/kg-bw per day, the highest dose, based on abortions in 3 of 10 adult females in pregnant rabbits dosed by gavage during gestation . The lowest oral LOAEL for maternal toxicity was 10 mg/kg-bw per day, based on signs of anemia (increased reticulocytes and methaemoglobin) in rabbits dosed at 0-80 mg/kg-bw per day in a range-finding developmental study. Mammalian lymphocyte mutagen **Huls Canada **Merck
N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE	Allergic reactions which develop in the respiratory passages as bronchial asthma or rhinoconjunctivitis, are mostly the result of reactions of the allergen with specific antibodies of the IgE class and belong in their reaction rates to the manifestation of the immediate type. In addition to the allergen-specific potential for causing respiratory sensitisation, the amount of the allergen, the exposure period and the genetically determined disposition of the exposed person are likely to be decisive. Factors which increase the sensitivity of the mucosa may play a role in predisposing a person to allergy. They may be genetically determined or acquired, for example, during infections or exposure to irritant substances. Immunologically the low molecular weight substances become complete allergens in the organism either by binding to peptides or proteins (haptens) or after metabolism (prohaptens). Particular attention is drawn to so-called atopic diathesis which is characterised by an increased susceptibility to allergic rhinitis, allergic bronchial asthma and atopic eczema (neurodermatitis) which is associated with increased IgE synthesis. Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be

	involved. Such allergy is of the delayed type with onset up to four hours following exposure. For N-[3-(trimethoxysilyl)propyl]ethylenediamine (AEAPTMS) and its analogues: **Acute toxicity**: In rabbits, AEAPTMS is moderately irritating to the skin and severely irritating to the eyes. AEAPTMS showed a skin sensitizing potential in a guinea pig maximisation test. **Repeat dose toxicity**: AEAPTMS was tested in rats in a combined repeated dose toxicity test with a reproductive/ developmental screening test, following the OECD test guideline 422 (28-39 days). Clinical findings attributed to the test substance included clear perioral soiling in several high dose animals and either increased nasal sounds, labored respiration, or soft vocalizations in approximately half of the high dose females and one high dose male. These signs were not seen in the control animals and infrequently seen in either of the two lower dose groups. Observations recorded at dosing indicated a dose-related resistance to dosing. Evaluating all 30 animals/dose over the entire dosing period, the incidence of resistance was 3, 5, 27 and 62% for the controls, 25, 125 and 500 mg/kg bw/day dose groups, respectively. Similar incidence patterns were noted for salivation just prior to dosing, wetness around the mouth at dosing, and wetness around the mouth 5-30 minutes following dosing. These clinical findings are anticipated based on the amine-functionality of the material and indicative of irritation, rather than systemic effects. There were no test substance-related effects on body weight, organ weights or organ-to-body weight ratios, food consumption, FOB or motor activity parameters, or haematology or serum chemistry parameters, and no macroscopic or microscopic findings were attributed to the test-substance. Based on the results of this study, the NOAEL for the systemic toxicity of this material in the rat via oral dosing for at least 28 consecutive days was 500 mg/kg bw/day. **Genetic toxicity:** AEAPTMS has been tested in an Ames test, an *in vitro* Chinese hamster ovary cell HGPRT assay and sister chromatid exchange assay, and an *in vivo* mouse micronucleus assay. These *in vivo* and *in vitro* screening assays have not revealed any evidence of genotoxic potential of AEAPTMS. **Reproductive and developmental toxicity:** Rats exposed to AEAPTMS by gavage to doses of 0, 25, 125, and 500 mg/kg bw/day, as part of an OECD guideline 422 study, no test substance-related effects were observed in any of the reproductive parameters evaluated. Based on the results of this reproductive/developmental screening study, the NOAEL for maternal (systemic toxicity) and developmental toxicity of AEAPTMS in the rat via the oral dosing was 500 mg/kg bw/day (the highest dose tested). The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. 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.
VINYLTRIS(METHYLETHYLKETOXIME)SILANE	No significant acute toxicological data identified in literature search.
	The material may be irritating to the eye, with prolonged contact causing inflammation.

OCTAMETHYLCYCLOTETRASILOXANE	Repeated or prolonged exposure to irritants may produce conjunctivitis. Does not cause skin sensitization Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES) Result: negative Remarks: Based on test data Test Type: Mutagenicity (in vitro mammalian cytogenetic test) Result: negative Remarks: Based on test data Test Type: Chromosome aberration test in vitro Result: negative Remarks: Based on test data Test Type: In vitro sister chromatid exchange assay in mammalian cells Result: negative Remarks: Based on test data Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro) Result: negative Remarks: Based on test data Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Rat Application Route: inhalation (vapor) Result: negative Remarks: Based on test data Test Type: Rodent dominant lethal test (germ cell) (in vivo) Species: Rat Application Route: Ingestion Result: negative Remarks: Based on test data Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects Effects on fertility : Test Type: Two-generation reproduction toxicity study Species: Rat, male and female Application Route: inhalation (vapor) Symptoms: Effects on fertility. Remarks: Based on test data Effects on fetal development : Test Type: Prenatal development toxicity study (teratogenicity) S pecies: Rabbit Application Route: inhalation (vapor) Symptoms: No effects on fetal development. Remarks: Based on test data Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, based on animal experiments. STOT-single exposure May cause damage to organs (Eyes, Central nervous system Routes of exposure: Ingestion Assessment: No significant health effects observed in animals at concentrations of 100 mg/kg bw or less. Routes of exposure: inhalation (vapor) Assessment: No significant health effects observed in animals at concentrations of 1 mg/l/6h/d or less. Routes of exposure: Skin contact Assessment: No significant health effects observed in animals at concentrations of 200 mg/kg bw or less. Results from a 2-year repeated vapor inhalation exposure study to rats of octamethylcyclotetrasiloxane (D4) indicate effects (benign uterine adenomas) in the uterus of female animals. This finding occurred at the highest exposure dose (700 ppm) only. Studies to date have not demonstrated if these effects occur through pathways that are relevant to humans. Repeated exposure in rats to D4 resulted in protoporphyrin accumulation in the liver. Without knowledge of the specific mechanism leading to the protoporphyrin accumulation the relevance of this finding to humans is unknown.
METHYLTRI(METHYLETHYLKETOXIME)SILANE & METHYL ETHYL KETOXIME & N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE & VINYLTRIS(METHYLETHYLKETOXIME)SILANE	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.
METHYLTRI(METHYLETHYLKETOXIME)SILANE & VINYLTRIS(METHYLETHYLKETOXIME)SILANE	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 the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.
N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE & OCTAMETHYLCYCLOTETRASILOXANE	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.

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

Avoid contaminating waterways.
Acute aquatic hazard: This material has been classified as non-hazardous. Acute toxicity estimate (based on ingredients):>100mg/L
Long-term aquatic hazard: This material has been classified as non-hazardous. Non-rapidly or rapidly degradable substance for which there are adequate chronic toxicity data available OR in the absence of chronic toxicity data. Acute toxicity estimate (based on ingredients):>100 mg/L, where the substance is not rapidly degradable and/or BCF < 500 and/or log Kow<4.
Ecotoxicity: No information available
Persistence and degradability: No
information available Bio accumulative
potential: No information available
Mobility: No information available

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging Disposal	Recycle wherever possible or consult manufacturer for recycling options. Consult State Land Waste Management Authority for disposal. Bury residue in an authorised landfill. Recycle containers if possible or dispose of in an authorised landfill.

SECTION 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

SECTION 15 REGULATORY INFORMATION

Safety, Health and Environmental Regulations / Legislation specific for the substance or mixture
Australia Exposure Standards
Australia Inventory of Chemical Substances (AICS)
Australia Hazardous Substances Information System – Consolidated Lists
Australia Inventory of Chemical Substances (AICS)
International Agency for Research on Cancer (IARC) – Agents classified by the IARC Monographs
International Air Transport Association (IATA) Dangerous Goods Regulations – Prohibited List Passenger and Cargo Aircraft
PORTLAND CEMENT (65997-15-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS

National Inventory	Status
Australia - AICS	N
Canada - DSL	N
Canada - NDSL	N
China - IECSC	N
Europe - EINEC / ELINCS / NLP	N
Japan - ENCS	N

Korea - KECI	N
New Zealand - NZIoC	N
Philippines - PIGGS	N
USA - TSCA	N
Taiwan – TCSI	N
Mexico – INSQ	N
Vietnam – NCI	N
Russia – ARIPS	N
Thailand – TECI	N
Legend:	*Y = All ingredients are on the inventory* *N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)*

SECTION 16 OTHER INFORMATION

This Safety Data Sheet (SDS) summarises at the date of issue our best knowledge of the health and safety hazard information of the product, and how to safely handle and use the product in the workplace. Since the company cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage review the SDS in the context of how the user intends to handle and use the product in the workplace.

If clarification or further information is needed to ensure that an appropriate assessment can be made, the user should contact this company.

Our responsibility for product as sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available upon request.