ThreeBond

SAFETY DATA SHEET

Issue date 27-Dec-2016 **Revision Date** 12-Jan-2017 **Version** 1

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Product name Super Sealer No.1 Gray

Recommended use of the chemical and restrictions on use

Recommended use Adhesive, Sealant

Details of the supplier of the safety data sheet

Manufacture

Three Bond Singapore Pte Ltd.
Australia Branch
Factory: 2/38 Jellico dve Scoresby
3179 Melbourne Victoria
Australia
TEL : 61-3-9753-2522
FAX : 61-3-9753-2566

Emergency telephone number

TEL: 0417-350-027 (Mr.Wesley Mallett)

Section 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1B

Label elements

Signal word Warning

Hazard statements

H319 - Causes serious eye irritation
H317 - May cause an allergic skin reaction

Precautionary Statements - Prevention

• Avoid breathing dust/fume/gas/mist/vapors/spray
• Wear protective gloves/protective clothing/eye protection/face protection
• Wash thoroughly after handling
• Contaminated work clothing should not be allowed out of the workplace

Precautionary Statements - Response
• IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
• If eye irritation persists: Get medical advice/attention
• IF ON SKIN: Wash with plenty of soap and water
• Take off contaminated clothing and wash before reuse
• If skin irritation or rash occurs: Get medical advice/attention

Precautionary Statements - Disposal
• Dispose of contents/container to an approved waste disposal plant

Other hazards which do not result in classification
• This product reacts with water, moisture or humid air to evolve following compounds: Methylethylketoxime

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Concentration
Butan-2-one o o' o''-(methylsilylidyne)trioxime; Methyloximesilane	22984-54-9	1 - <3
Butan-2-one o o' o''-(vinylsilylidyne)trioxime; Vinyloximesilane	2224-33-1	<1
Titanium oxide	13463-67-7	<1
N-(3-(trimethoxysilyl)propyl)ethyleneiamine; Alkoxysilane	1760-24-3	<1
Octamehtylcyclotetrasiloxane (Impurity)	556-67-2	<0.2
Butanone oxime (Impurity) ; Methylethylketoxime	96-29-7	<1

Decomposition

Chemical name	CAS No.	Concentration
Butanone oxime ; Methylethylketoxime	96-29-7	

Section 4: FIRST AID MEASURES

Description of first aid measures

General advice Call 911 or emergency medical service Remove and isolate contaminated clothing and shoes

Eye contact Rinse immediately with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persist.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water. For minor skin contact, avoid spreading material on unaffected skin. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

Inhalation Move to fresh air. Call a physical if symptoms develop or persist.

Ingestion Rinse mouth. Get medical attention immediately.

For emergency responders

Self-protection of the first aider Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Wash contaminated clothing before reuse.

Most important symptoms and effects, both acute and delayed

Symptoms Dermatitis. Rash. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling and blurred vision. May cause an allergic skin reaction.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically

Section 5: FIRE FIGHTING MEASURES

Flammable properties
No information

Suitable extinguishing media
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media
None known.

Specific hazards arising from the chemical
By heating and fire, harmful vapors/gases may be formed. Nitrogen oxides. (corrosive)

Protective equipment and precautions for firefighters
Firefighters must be use standard protective equipment including flame retardant coat, helmet, gloves, rubber boots and self-contained breathing apparatus.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Do not touch or walk through spilled material. Ensure adequate ventilation. Wear appropriate personal protective equipment.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

Methods for containment Eliminate sources of ignition

Methods for cleaning up Large Spills: Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Prevention of secondary hazards Never return spills in original containers for re-use.

Section 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Provide adequate ventilation. Use care in handling/storage. Wear appropriate personal protective equipment. Wash hands thoroughly after handling.
Do not breathe mist or vapor. Avoid contact with skin. Avoid contact with eyes. Avoid prolonged exposure.

Conditions for safe storage, including any incompatibilities

Storage conditions Keep containers tightly closed. Keep out of the reach of children. Store in a cool, dry place out of direct sunlight. Keep in original container. Store away from incompatible materials (see Section 10 of the SDS).

Incompatible materials See Section 10.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits

Australia. National Workplace OELs. (Workplace Exposure Standard for Airborne Contaminants, Appendix A)

Components	Type	Value	Form
Titanium oxide (CAS 13643-67-7)	TWA	10 mg/m3	Inhalable dust

Australia. National Workplace OELs. (Workplace Exposure Standard for Atmospheric Contaminants, in the Occupational Environment)

Components	Type	Value	Form
Titanium oxide (CAS 13643-67-7)	TWA	10 mg/m3	Inspirable dust

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Titanium oxide (CAS 13643-67-7)	TWA	10 mg/m3	

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
Titanium oxide (CAS 13643-67-7)	TWA	4 mg/m3	Respirable
		10 mg/m3	Inhalable

Vendor guide

Components	Type	Value
Butanone oxime (Impurity);Methylethylketoxime (CAS 96-29-7)	STEL	10 ppm
	TWA	3 ppm

Decomposition

Components	Type	Value
Butanone oxime (Impurity);Methylethylketoxime (CAS 96-29-7)	STEL	10 ppm
	TWA	3 ppm

Biological limit values No biological exposure limits noted for the ingredient(s)

Appropriate engineering control Provide adequate general and local exhaust ventilation. Provide eyewash station. Pay attention to ventilation such as local exhaust, mechanical and/or door open for at least 24 hours after application.

Individual protection measures, for example personal protective equipment (PPE)

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear protective gloves.

Other Wear suitable protective clothing.

Respiratory protection When workers are facing concentrations above the exposure limit they must use appropriate certificated respirators.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

Hygiene measures Avoid contact with eyes. Avoid contact with skin. Wash hands before breaks and Immediately after handling the product. Contaminated work clothing should not be Allowed out of the workplace. Handling in according with good industrial hygiene And safety practice.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid	
Appearance		
Paste		
Odor	Oxime odor	
Color	Gray	
Property	**Values**	**Remarks**
pH	No data available	(Refer to water solubility)
Melting point/freezing point	No data available	
Boiling point / boiling range	No data available	
Flash point	190.4 °F (88 °C) Closed Cup	(Does not sustain combustion)
Evaporation rate	< 1 (Butyl Acetate = 1)	
Relative density	1.03 (25°C)	
Vapor density	>1 (air = 1)	
Flammability or exposure limits		
Upper flammability limit:	No data available	
Lower flammability limit:	No data available	
Specific gravity	1.45	
Water solubility		Insoluble in water
Auto-ignition temperature	No data available	
Decomposition temperature	No data available	
Viscosity	Not applicable	

Section 10: STABILITY AND REACTIVITY

Stability Stable at normal conditions.

Possibility of hazardous reactions No hazard reaction known under normal conditions of use, storage and transport. Hazardous polymerization does not occur.

Conditions to avoid Not available.

Incompatible materials Strong oxidizing agent. Water, moisture.

Hazardous decomposition products This product reacts with water, moisture or humid air to evolve following products: methylethylketoxime. Refer to section 8: exposure controls/ personal protection and section 11: toxicological information.
Thermal breakdown of this product during fire or very high heat condition may evolve the following hazardous decomposition product:
Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Nitrogen oxide. Formaldehyde.

Section 11: TOXICOLOGICAL INFORMATION

Product Information

Inhalation No adverse effected due to inhalation are expected

Skin contact May cause an allergic skin reaction

Eye contact Causes serious eye irritation

Ingestion Expected to be a low ingestion hazard

Symptom related to exposure Dermatitis. Rash. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling and blurred vision. May cause an allergic skin reaction.

Acute toxicity

Components	Species	Test Results
Butanone oxime (Impurity); Methylethylketoxime (CAS 96-29-7)		
Acute		
Dermal		
LD50	Rabbit	> 1000 mg/kg (Male and female)
Inhalation		
Vapor		
LC50	Rat	>4.83 mg/l, 4 hours (Male and female)
Oral		
LD50	Rat	>900 mg/kg (Male and female) 2326 mg/kg (Male)
N-(3-(trimethoxysilylpropyl)ehtyleneiamine; Alkoxysilane (CAS 1760-24-3)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg 16 ml/kg
Oral		
LD50	Rat	2995 mg/kg 2400 mg/kg

Decomposition	Species	Test Results
Butanone oxime (Impurity); Methylethylketoxime (CAS 96-29-7)		
Acute		
Dermal		
LD50	Rabbit	> 1000 mg/kg (Male and female)
Inhalation		
Vapor		
LC50	Rat	>4.83 mg/l, 4 hours (Male and female)
Oral		
LD50	Rat	>900 mg/kg (Male and female) 2326 mg/kg (Male)

*Estimate for product may be based on additional component data not shown.

Skin corrosion/Irritation
SKIN-RABBIT : Moderately iiritation [Alkoxysilane]
SKIN-RABBIT : 500mg/24hr MILD [Octamethylcyclotetrasiloxane]

Serious eye damage/Irritation
Causes serious eye damage. [Vinyloximesilane] [Methylethylketoxime]]
EYE-RABBIT : 15mg SEVERE [Alkoxysilane]
Causes serious eye irritation. [Methylethylketoxime]]
EYE-RABBIT : MILD [Octamethylcyclotetrasiloxane]

Respiratory or skin sensitization

Respiratory sensitization
Not available

Skin sensitization

Germ cell mutagenicity
Negative

Carcinogenicity
Suspected of causing cancer. [Methylethylketoxime]
The following material is embedded in the product and not available as respirable dusts. When used as intended or supplied, the product will not pose hazard. Titanium oxide.

ACGIH Carcinogens

Titanium oxide (CAS 13463-67-7): A4 Not classifiable as human carcinogen.

IARC Monographs. Overall Evaluate of Carcinogenicity

Titanium oxide (CAS 13463-67-7): 2B Possibly carcinogenic to human

Reproductive toxicity
Octamethylcyclotetrasiloxane administered to rats by whole body inhalation at concentrations of 500 and 700 ppm for 70 days prior to mating, through mating, gestation

	and location resulted in decreases in live litter size. Additionally, increases in the incidence of deliveries of offspring extending over an unusually long time period (dystocia) were observed at these concentrations. Statistically significant alterations in these parameters were not observed in the lower concentrations evaluated (300 or 70 ppm). In a previous range-finding study, rats exposed to vapor concentrations of 700 ppm had decreases in the number of implantation sites and live litter [Octamethylcyclotetrasiloxane] Developmental toxicity: NOAEL 500mglkg/day (Rat), Maternal toxicity: NOAEL 500mg/kg/day (Rat) [Alkoxysilane]
Specific target organ toxicity-single exposure	Not available.
Specific target organ toxicity-repeated exposure	May cause damage to the following organs through prolonged or repeated exposure: Hematopoietic system. [Vinyloximesilane] Hematopoietic system. [Methyloximesilane] Repeated inhalation or oral exposure of mice and rats to octamethylcyclotetrasiloxane produced an increase in liver size. No gross histopathological or significant clinical chemistry effects were observed. An increase in liver metabolizing enzymes, as well as a transient increase in the number of normal cells (hyperplasia) followed by an increase in cell size (hypertrophy) were determined to be the underlying cause of the liver enlargement. The biochemical mechanisms producing these effects are highly sensitive in rodents, while similar mechanisms in humans are insensitive. A two year combined chronic and carcinogenicity assay was conducted on octamethylcyclotetrasiloxane. Rats were exposed by whole-body vapor inhalation 6 hrs/day, 5days/week for up to 104 weeks to 0,10, 30, 150 or 700ppm of octamethylcyclotetrasiloxane. The increase in incidence of (uterine) endometrial cell hyperplasia and uterine adenomas (be nign tumors) were observed in female rats at 700 ppm. Since these effects only occurred at 700ppm, a level that greatly exceeds typical workplace or concumer exposure, it is unlikely that industrial commercial or consumer uses of products containing octamethylcyclotetrasiloxane would result in a significant risk to human. [Octamethylcyclotetrasiloxane]
Aspiration hazard	Not available
Chronic effects	Not available
Other information	Additional Information Methyl Ethyl Ketoxime (MEKO). Material will generate MEKO on exposure to humid air gradually. Male rodents exposed to MEKO vapor at high concentration throughout their lifetime developed liver cancer. But relevance to human is uncertain now. Please read the detail information to MEKO below Skin Irritation ; Causes mild irritation. Can be absorbed through the skin. Eyes Irritation ; Causes severe irritation. Acute Oral Tox. ; LD50 (rat) = >900mg/kg. Acute Dermal Tox. ; LD50 (rabbit) = >1000mg/kg. Acute Inhalation Tox. ; LC50 (rat) >4.83mg/l/4Hr Inhalation Tox. ; Shows narcotic action at high concentration. May produce blood effects Skin sensitization ; Positive (guinea pig) Neurotoxicity ; High dose can produce transient and reversible change in neurobehavioral function. Carcinogenicity ; Liver carcinomas were observed in a lifetime inhalation study (ca. 2 years) in which mice and rats were exposed. Other Chronic Study ; Degenerative effects on the olfactory epithelium of nasal passages occurred in a concentration related manner in males and females of mice and rats at MEKO concentration of 15, 75 and 375ppm. The significant change in hematological parameters were observed at 404ppm concentration. Workplace Environmental Exposure Level; Vender guide; 3ppm (TWA), 10ppm (STEL), AIHA WEEL; 10ppm (TWA)

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity Toxic to aquatic life. [Alkoxysilane].
May cause long lasting human effects to aquatic life. [Octamethylcyclotetrasiloxane]

Components		Species	Test Results
Butanone oxime (Impurity); Methylethylketoxime (CAS 96-29-7)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	777 – 914 mg/l, 96 hours
N-(3-(trimethoxysilyl)propyl)ethyleneiamine; Alkoxysilance (CAS 1760-24-3)			
Aquatic			
Algae	EbC50	Green algae (Selenastrum capricornutum)	5.5 mg/l, 72 hr
	ErC50	Green algae (Selenastrum capricornutum)	8.8 mg/l, 72 hr
Crustacea	EC50	Daphnia magna	90 mg/l, 48 hr 81 mg/l, 48 hr
	NOEC	Daphnia magna	>1 mg/l, 21 days
Fish	LC50	Brachydanio rerio	597 mg/l, 96 hr
Titanium oxide (CAS 13463-67-7)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	>1000 mg/l, 48 hours
Fish	LC50	Mummichog (Fundulus heteroclitus)	>1000 mg/l, 96 hours

Decomposition		Species	Test Results
Butanone oxime (Impurity); Methylethylketoxime (CAS 96-29-7)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	777 – 914 mg/l, 96 hours

Persistence and degradability Causes easily hydrolysis in water or atmosphere. [Alkoxysilane]
Bioaccumulative potential Bio concentration Factor (BCF) / (Fathead minnows) : 12400 [Octomethylcyclotetrasiloxane]

Mobility in soil Not available.

Other adverse effects Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal method Not hardening substance: Incinerate. Incinerator should be appropriately equipped for silica and other fine powder which the product will generate in incineration. Workers should wear appropriate personal protective equipment(s) such as respirator.
Hardening substance: Bury or incinerate. Incinerator should be appropriately equipped for silica and other fine powder which the product will generate in incineration. Workers should wear appropriate personal protective equipment(s) such as respirator.
Contact with a disposal operator licensed by the Law on Disposal and Cleaning. Disposal of contents/container in accordance with local/regional/national/international regulations.

Residual waste Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see. Disposal instructions).

Contaminated packaging Since emptied container may retain product residue, follow label warnings even after container is emptied.

Section 14: TRANSPORT INFORMATION

ADG

Not regulated as dangerous goods

RID

Not regulated as dangerous goods

IATA

Not regulated as dangerous goods

IMDG

Not regulated as dangerous goods

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code This product is not intended to be transported in bulk.

Section 15: REGULATORY INFORMATION

Safety, health and environmental regulations

National regulations This Safety Data Sheet was prepared in accordance with Australia Model Code of Practice for the preparation of Safety Data Sheets for Hazardous Chemicals (23/12/2011).

Australia Medicines & Poisons Appendix A
Poisons schedule number not allocated.
Australia Medicines & Poisons Appendix B
Poisons schedule number not allocated.
Australia Medicines & Poisons Appendix C
Poisons schedule number not allocated.
Australia Medicines & Poisons Appendix D
Poisons schedule number not allocated.
Australia Medicines & Poisons Appendix E
Poisons schedule number not allocated.
Australia Medicines & Poisons Appendix F
Poisons schedule number not allocated.
Australia Medicines & Poisons Appendix G
Poisons schedule number not allocated.
Australia Medicines & Poisons Appendix H
Poisons schedule number not allocated.
Australia Medicines & Poisons Appendix I
Poisons schedule number not allocated.
Australia Medicines & Poisons Appendix J
Poisons schedule number not allocated.
Australia Medicines & Poisons Appendix K
Poisons schedule number not allocated.
Australia Medicines & Poisons Schedule 2
Poisons schedule number not allocated.
Australia Medicines & Poisons Schedule 3
Poisons schedule number not allocated.
Australia Medicines & Poisons Schedule 4
Poisons schedule number not allocated.
Australia Medicines & Poisons Schedule 5
Poisons schedule number not allocated.
Australia Medicines & Poisons Schedule 6
Poisons schedule number not allocated.
Australia Medicines & Poisons Schedule 7
Poisons schedule number not allocated.
Australia Medicines & Poisons Schedule 8

Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 9
Poisons schedule number not allocated.

High Volume Industrial Chemicals (HVIC)
Titanium oxide (CAS 13463-67-7) 100000-999999 TONNES See the regulation for additional information.

Importation of Ozone Deleting Substances (Customs(Prohibited imports) Regulations 1956, Schedule 10)
Not listed.

National Pollutant Inventory (NPI) substance reporting list
Not listed.

Prohibited Carcinogenic Substances
Not regulated.

Prohibited Substances (National Model Regulation for the control of Workplace Hazardous Substances, Schedule 2 NOHSC:1005 (1994) as amended)
Not listed.

Resricted Importation of Organochlorine Chemicals (Customs(Prohibited Imports) Regulations 1956, Schedule 9)
Not listed.

Restricted Carcinogenic Substances
Not regulated.

International regulations

Stockholm Convention
Not applicable.

Rotterdam Convention
Not applicable

Kyoto protocol
Not applicable.

Montreal Protocol
Not applicable.

Basel Convention
Not applicable.

Section 16: OTHER INFORMATION

Key literature references and sources for data
ACGIH - Threshold Limit Values
U.S. - OSHA - Final PELs
Japan - Recommended Exposure Limits

Issue date	27-Dec-2016
Revision Date	12-Jan-2017
Revision note	The symbol (*) in the margin of this SDS indicates that this line has been revised.

End of Safety Data Sheet