SAFETY DATA SHEET

FIREBAN 1 GREY EXP
Revision Number 3

Revision date 04-Aug-2019
Supersedes Date: 25-Mar-2019

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

1.1. Product Identifier

Product Name FIREBAN 1 GREY EXP
Pure substance/mixture Mixture

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

Recommended use Sealant.
Uses advised against No information available.

1.3. Details of the supplier of the safety data sheet

Company Name
Bostik New Zealand Limited
19 Eastern Hutt Road Wingate,
Lower Hutt, New Zealand
Tel: 04-567 5119
Fax: 04-567 5412

Manufacturer
Bostik Australia Pty Ltd
51-71 High Street,
Thomastown Victoria
Australia
Tel: 613 9279-9333
Fax: 613 9279-9342

ABN: 79 003 893 838

1.4. Emergency telephone number

Emergency Telephone 24 Hr: 0800 243 622
+64 4 917 9888
Poison Centre : 0800 764 766

E-mail address SDS.AP@Bostik.com

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Acute toxicity - Inhalation (Vapors)	Category 3 (6.1C)
Acute toxicity - Inhalation (Dusts/Mists)	Category 4 (6.1D)
Skin corrosion/irritation	Category 3 (6.3B)
Respiratory sensitization	Category 1A
Skin sensitization	Category 1A
Carcinogenicity	Category 2 (6.7B)
Reproductive toxicity	Category 1A (6.8A)
Hazardous to the Aquatic Environment - Acute Hazard	Category 2 (9.1D)
Hazardous to the Aquatic Environment - Chronic Hazard	Category 2 (9.1B)

2.2. Label Elements

Signal word Danger

Hazard statements

H316 - Causes mild skin irritation
H331 - Toxic if inhaled
H411 - Toxic to aquatic life with long lasting effects
H360 - May damage fertility or the unborn child
H351 - Suspected of causing cancer
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H317 - May cause an allergic skin reaction

Prevention
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P281 - Use personal protective equipment as required
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P271 - Use only outdoors or in a well-ventilated area
P284 - In case of inadequate ventilation wear respiratory protection
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves
P273 - Avoid release to the environment
Inhalation
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P311 - Call a POISON CENTER or doctor/physician
Skin
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P363 - Wash contaminated clothing before reuse
Spill
P391 - Collect spillage
Storage
P405 - Store locked up
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
Disposal
P501 - Dispose of contents/ container to an approved waste disposal plant

2.3. Other Hazards

Small amounts of methanol (CAS 67-56-1) are formed by hydrolysis and released upon curing

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances
Mixture

3.2 Mixtures

Chemical name	CAS No.	Weight-%
Frits, chemicals	65997-18-4	5 - <10
Xylenes (o-, m-, p- isomers)	1330-20-7	5 - <10
2-Propanol, 1-chloro-, phosphate (3:1)	13674-84-5	1 - <5
Urea, N,N''-(methylenedi-4,1-phenylene)bis[N'-butyl-	77703-56-1	1 - <3
Ammonium polyphosphate	68333-79-9	1 - <3
Ethylbenzene	100-41-4	1 - <3
Benzenesulfonyl isocyanate, 4-methyl-	4083-64-1	0.1- <1
4,4'-Methylenediphenyl diisocyanate	101-68-8	0.1- <1
Benzene, 1,3-diisocyanatomethyl-	26471-62-5	0.1- <1
Glycidoxypropyltrimethoxysilane	2530-83-8	0.1- <1

**** Any remaining ingredients are not hazardous*

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation	Immediate medical attention is required. Move victim to fresh air. Administer oxygen if breathing is difficult. If breathing is irregular or stopped, administer artificial respiration.
Skin contact	Wash contaminated clothing before reuse. Wash off immediately with plenty of water. If symptoms persist, call a physician.
Eye contact	Call a physician immediately. Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. If symptoms persist, call a physician.
Ingestion	Call a physician or poison control center immediately. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves

4.2. Most important symptoms and effects, both acute and delayed

Symptoms	None known.

4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians	May cause sensitization by inhalation and skin contact. Treat symptomatically. Small amounts of methanol (CAS 67-56-1) are formed by hydrolysis and released upon curing.

4.4. Reference to Other Sections

Reference to other sections	Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION. Section 11: TOXICOLOGY INFORMATION.

Section 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	No information available.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	Thermal decomposition can lead to release of irritating and toxic gases and vapors.

5.3. Advice for firefighters

Special protective equipment for fire-fighters	Wear self-contained breathing apparatus and protective suit.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Evacuate personnel to safe areas. Do not touch or walk through spilled material. Use personal protective equipment as required.

6.2. Environmental precautions

Environmental precautions	See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Methods for containment If possible, turn leaking containers so that gas escapes rather than liquid. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Transport to well ventilated area and treat with neutralizing solution: mixture of 80% water and 20% non-ionic surfactant Tergitol TMN-10; or 90% water, 3-8% concentrated ammonia and 2% detergent. Add about 10 parts of neutralizer per part of isocyanate, with mixing. Allow substance to evaporate.

Methods for cleaning up Do not direct water at spill or source of leak. Decontaminate floor with decontamination solution letting stand for at least 15 minutes.

6.4. Reference to other sections

Reference to other sections Section 7: HANDLING AND STORAGE
Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION
Section 13: DISPOSAL CONSIDERATIONS

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas. Avoid breathing vapors or mists.

7.2. Conditions for safe storage, including any incompatibilities

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

Storage Conditions Keep containers tightly closed in a cool, well-ventilated place. Keep container tightly closed and dry. Product cures with moisture.

Incompatible materials Water Alcohols Strong bases Strong oxidizing agents Finely powdered metals

7.3. Specific end use(s)

Specific Use(s) Sealant.

Other information No information available.

7.4. References to Other Sections

Reference to other sections Section 13: DISPOSAL CONSIDERATIONS. Section 10: STABILITY AND REACTIVITY.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits

Chemical name	New Zealand	Australia	European Union
Frits, chemicals 65997-18-4	TWA: 0.1 mg/m³ TWA: 0.05 mg/m³ TWA: 0.002 mg/m³ TWA: 0.01 mg/m³ TWA: 0.02 mg/m³ TWA: 0.005 mg/m³ TWA: 0.5 mg/m³ TWA: 0.2 mg/m³ TWA: 0.02 TWA: 5 mg/m³ STEL: 10 mg/m³	0.05 mg/m³ TWA 0.01 mg/m³ TWA 0.5 mg/m³ TWA 1 mg/m³ TWA 5 mg/m³ TWA 10 mg/m³ STEL	-
Xylenes (o-, m-, p- isomers) 1330-20-7	TWA: 50 ppm TWA: 217 mg/m³	80 ppm TWA 350 mg/m³ TWA 150 ppm STEL 655 mg/m³ STEL	TWA: 50 ppm TWA: 221 mg/m³ STEL: 100 ppm STEL: 442 mg/m³ *
Ethylbenzene	TWA: 100 ppm	100 ppm TWA	TWA: 100 ppm

100-41-4	TWA: 434 mg/m³ STEL: 125 ppm STEL: 543 mg/m³	434 mg/m³ TWA 125 ppm STEL 543 mg/m³ STEL	TWA: 442 mg/m³ STEL: 200 ppm STEL: 884 mg/m³ *
4,4'-Methylenediphenyl diisocyanate 101-68-8	TWA: 0.02 mg/m³ STEL: 0.07 mg/m³	0.02 mg/m³ TWA 0.07 mg/m³ STEL	-

Chemical name	ACGIH TLV	NIOSH IDLH	OSHA PEL
Frits, chemicals 65997-18-4	STEL: 10 mg/m³ Zr TWA: 0.01 mg/m³ As TWA: 0.05 mg/m³ Pb TWA: 0.01 mg/m³ Cd TWA: 0.002 mg/m³ Cd respirable particulate matter TWA: 0.5 mg/m³ Sb TWA: 1 mg/m³ Cu dust and mist TWA: 3 mg/m³ W respirable particulate matter in the absence of cobalt TWA: 5 mg/m³ Zr TWA: 0.02 mg/m³ Mn respirable particulate matter TWA: 0.1 mg/m³ Mn inhalable particulate matter	IDLH: 5 mg/m³ As IDLH: 9 mg/m³ Cd dust and fume IDLH: 50 mg/m³ Sb IDLH: 100 mg/m³ Cu dust and mist IDLH: 500 mg/m³ Mn IDLH: 25 mg/m³ Zr IDLH: 100 mg/m³ Pb IDLH: 10 mg/m³ Ni Ceiling: 0.002 mg/m³ As 15 min Ceiling: 0.05 mg/m³ V dust and fume 15 min TWA: 0.5 mg/m³ Sb TWA: 1 mg/m³ Cu dust and mist TWA: 1 mg/m³ Mn TWA: 5 mg/m ³ except Zirconium tetrachloride Zr TWA: 0.050 mg/m³ Pb TWA: 0.015 mg/m³ except Nickel carbonyl Ni STEL: 3 mg/m³ Mn STEL: 10 mg/m³ Zr	TWA: 10 µg/m³ As TWA: 50 µg/m³ Pb TWA: 0.5 mg/m³ Sb TWA: 5 mg/m³ Zr Ceiling: 5 mg/m³ Mn
Xylenes (o-, m-, p- isomers) 1330-20-7	STEL: 150 ppm TWA: 100 ppm	-	TWA: 100 ppm TWA: 435 mg/m³
Ethylbenzene 100-41-4	TWA: 20 ppm	IDLH: 800 ppm TWA: 100 ppm TWA: 435 mg/m³ STEL: 125 ppm STEL: 545 mg/m³	TWA: 100 ppm TWA: 435 mg/m³
4,4'-Methylenediphenyl diisocyanate 101-68-8	TWA: 0.005 ppm	IDLH: 75 mg/m³ Ceiling: 0.020 ppm 10 min Ceiling: 0.2 mg/m³ 10 min TWA: 0.005 ppm TWA: 0.05 mg/m³	Ceiling: 0.02 ppm Ceiling: 0.2 mg/m³
Benzene, 1,3-diisocyanatomethyl- 26471-62-5	STEL: 0.005 ppm inhalable fraction and vapor TWA: 0.001 ppm inhalable fraction and vapor S*	-	-

Derived No Effect Level (DNEL) No information available

Predicted No Effect Concentration (PNEC) No information available

OTHER INFORMATION Small amounts of methanol (CAS 67-56-1) are formed by hydrolysis and released upon curing

8.2. Exposure controls

Engineering controls Ensure adequate ventilation, especially in confined areas.

PPE - Personal Protection Equipment

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

Skin and body protection Wear suitable protective clothing. No special technical protective measures are necessary under normal conditions.

Hand protection Wear suitable chemical resistant gloves. The selection of suitable gloves does not only depend on the material, but also on further marks of quality and various manufacturers.

Respiratory protection No protective equipment is needed under normal use conditions. Respiratory protection required in insufficiently ventilated working areas and during spraying. An air-fed mask, or for short periods of work, a combination of professional filter is recommended.

General hygiene considerations Do not eat, drink or smoke when using this product. Wash hands thoroughly after

handling. Avoid contact with skin, eyes or clothing. Take off contaminated clothing and wash before reuse.

Environmental exposure controls No information available.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Very viscous Paste
Color	Gray
Odor	Solvent
Odor threshold	No information available

Property	**Values**	**Remarks • Method**
pH	Not applicable No data available	
Melting point / freezing point	No data available	
Boiling point / boiling range	No data available	
Flash point	No data available	
Evaporation rate	No data available	
Flammability (solid, gas)	Substance does not burn but will support combustion .	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	
Vapor density	No data available	
Relative density	No data available	
Water solubility	No data available	
Solubility(ies)	No data available	
Partition coefficient	No data available	
Autoignition temperature	No data available	
Decomposition temperature	No data available	
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Explosive properties	No information available	
Oxidizing properties	No information available	

9.2. Other information

Softening Point	No information available
Molecular weight	No information available
Solvent content (%)	No information available
Solid content (%)	approx. 64
Density	1.46
Bulk density	No information available
VOC Content (%)	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity None under normal use conditions.

10.2. Chemical stability

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Hazardous polymerization Hazardous polymerization may occur.

10.4. Conditions to avoid

Conditions to avoid Keep from any possible contact with water. Extremes of temperature and direct sunlight. Storage near to reactive materials. Protect from moisture. Product cures with moisture.

10.5. Incompatible materials

Incompatible materials Water. Alcohols. Strong bases. Strong oxidizing agents. Finely powdered metals.

10.6. Hazardous decomposition products

Hazardous decomposition products Carbon monoxide. Carbon dioxide (CO2). Nitrogen oxides (NOx). Hydrogen cyanide. Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Section 11: TOXICOLOGY INFORMATION

11.1. Information on toxicological effects

Acute Toxicity

Product Information Product does not present an acute toxicity hazard based on known or supplied information.

Inhalation No data available.
Eye contact No data available.
Skin contact No data available.
Ingestion No data available.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Frits, chemicals 65997-18-4	> 2000 mg/kg (Rat)	-	-
Xylenes (o-, m-, p- isomers) 1330-20-7	= 3500 mg/kg (Rat)	> 1700 mg/kg (Rabbit) > 4350 mg/kg (Rabbit)	= >47635 mg/L (Rat) 4 h = >5000 ppm (Rat) 4 h
2-Propanol, 1-chloro-, phosphate (3:1) 13674-84-5	LD50 > 500 - < 2000 mg/kg (male) LD50 = 632 mg/kg (female) [Rat]	LD50 > 2000 mg/kg (Rat) OECD 402	> 5.05 mg/L (Rat) 4 h
Ammonium polyphosphate 68333-79-9	> 2000 mg/kg (Rat)	-	-
Ethylbenzene 100-41-4	= 3500 mg/kg (Rat)	= 15400 mg/kg (Rabbit)	= 1432 mg/L (Rat) 4 h
Benzenesulfonyl isocyanate, 4-methyl- 4083-64-1	= 2234 mg/kg (Rat)	LD 50 (Rat) > 2000 mg/kg OECD 402	> 640 ppm (Rat) 1 h
4,4'-Methylenediphenyl diisocyanate 101-68-8	= 31600 mg/kg (Rat) = 9200 mg/kg (Rat)	LD 50 > 9400 mg/kg (Rabbit) OECD 402	= 1.5 mg/L (Rat) 4 h
Benzene, 1,3-diisocyanatomethyl- 26471-62-5	= 3060 mg/kg (Rat)	= 10000 mg/kg (Rabbit)	= 0.107 mg/L (Rat) 4 h (Vapour)
Glycidoxypropyltrimethoxysilane 2530-83-8	= 8025 mg/kg (rat)	= 4250 mg/kg (Rabbit)	> 5.3 mg/L (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.
Serious eye damage/eye irritation No information available.
Sensitization No information available.
Germ cell mutagenicity No information available.
Reproductive toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Target organ effects retina, Eyes, Skin, liver, blood forming system, Central Vascular System (CVS), kidney, blood, Lungs, Lymphatic System, Nasal Cavities, Prostate.
Aspiration hazard No information available.

Carcinogenicity The following substance(s) are classified in Annex VI CLP (1272/2008) as carcinogenic.

Chemical name	IARC	China	Japan
Frits, chemicals	Group 1 Group 2A Group 2B	-	Group 1 Group 2B
Xylenes (o-, m-, p- isomers)	Group 3	-	-
Ethylbenzene	Group 2B	Possibly carcinogenic to humans	Group 2B
4,4'-Methylenediphenyl diisocyanate	Group 3	-	-
Benzene, 1,3-diisocyanatomethyl-	Group 2B	-	Group 2B

IARC (International Agency for Research on Cancer) *Group 1 - Carcinogenic to Humans Group 2A - Probably Carcinogenic to Humans Group 2B - Possibly Carcinogenic to Humans Group 3 - Not Classifiable as to Carcinogenicity in Humans*

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity

Product Information
Toxic to aquatic life with long lasting effects.

Component Information

Data obtained on the component(s) include

Chemical name	Algae/aquatic plants	Fish	Crustacea
Xylenes (o-, m-, p- isomers) 1330-20-7	-	LC50 96 h 2.6 mg/L (Oncorhynchus mykiss) (OECD 203)	EC50 48 h = 3.4 mg/L (water flea)
2-Propanol, 1-chloro-, phosphate (3:1) 13674-84-5	EC50 (72 h) = 82 mg/L (Pseudokirchneriella subcapitata) OECD 201	LC50 (96 h) = 51 mg/L (Pimephales promelas)	EC50 (48 h) = 131 mg/L (Daphnia magna)
Urea, N,N''-(methylenedi-4,1-phenylene) bis[N'-butyl- 77703-56-1	EC50 (72h) >100 mg/L Algae (Raphidocelis subcapitata)	LC50 (96h)>250 mg/L Fish (Brachydanio rerio)	EC50 (48h) >100 mg/L Daphnia magna
Ammonium polyphosphate 68333-79-9	-	LC50: =123mg/L (96h, Oncorhynchus mykiss) LC50: 685 - 1066mg/L (96h, Oncorhynchus mykiss) LC50: 389 - 654mg/L (96h, Pimephales promelas) LC50: >500mg/L (96h, Brachydanio rerio)	-
Ethylbenzene 100-41-4	EC50 72 h 2.6 - 11.3 mg/L (Pseudokirchneriella subcapitata)	LC50 96 h = 4.2 mg/L (Oncorhynchus mykiss semi-static)	EC50: 1.8 - 2.4mg/L (48h, Daphnia magna)
4,4'-Methylenediphenyl diisocyanate 101-68-8	-	>1000 mg/l (Danio rerio)	-
Glycidoxypropyltrimethoxysilane 2530-83-8	-	LC50 (96h) = 55 mg/L (Cyprinus carpio) OECD 203	EC50 (48h) =473 mg/L Daphnia magna

12.2. Persistence and degradability

No information available.

Component Information			
4,4'-Methylenediphenyl diisocyanate (101-68-8)			
Method	**Exposure time**	**Value**	**Results**
OECD Test No. 302C: Inherent Biodegradability: Modified MITI Test (II)	28 days	0% biodegradation	Not readily biodegradable

12.3. Bioaccumulative potential

There is no data for this product.

Chemical name	Partition coefficient	Bioconcentration factor (BCF)
Xylenes (o-, m-, p- isomers) 1330-20-7	3.15	15
2-Propanol, 1-chloro-, phosphate (3:1) 13674-84-5	2.68	4.6
Ethylbenzene 100-41-4	3.2	15
Benzenesulfonyl isocyanate, 4-methyl- 4083-64-1	0.6	-
4,4'-Methylenediphenyl diisocyanate 101-68-8	4.51	200
Benzene, 1,3-diisocyanatomethyl- 26471-62-5	-	5

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

Chemical name	PBT and vPvB assessment
Frits, chemicals 65997-18-4	PBT assessment does not apply
Xylenes (o-, m-, p- isomers) 1330-20-7	The substance is not PBT / vPvB
2-Propanol, 1-chloro-, phosphate (3:1) 13674-84-5	The substance is not PBT / vPvB
Urea, N,N''-(methylenedi-4,1-phenylene)bis[N'-butyl- 77703-56-1	Further information relevant for the PBT assessment is necessary
Ammonium polyphosphate 68333-79-9	PBT assessment does not apply
Ethylbenzene 100-41-4	The substance is not PBT / vPvB
Benzenesulfonyl isocyanate, 4-methyl- 4083-64-1	The substance is not PBT / vPvB
4,4'-Methylenediphenyl diisocyanate 101-68-8	The substance is not PBT / vPvB
Benzene, 1,3-diisocyanatomethyl- 26471-62-5	The substance is not PBT / vPvB
Glycidoxypropyltrimethoxysilane 2530-83-8	The substance is not PBT / vPvB

12.6. Other adverse effects

No information available.

Endocrine Disruptor Information .

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14: TRANSPORT INFORMATION

IMDG	Not regulated
IATA	Not regulated
ADR	Not regulated

Section 15: REGULATORY INFORMATION

National Regulations

ERMA Group	HSR002671

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet
No information available

Key Literature References and Sources for Data
No information available

Prepared By	Product Safety & Regulatory Affairs
Revision date	04-Aug-2019
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Training Advice	No information available

Disclaimer
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End of Safety Data Sheet