



SAFETY DATA SHEET STOPGAP F77 HARDENER

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

1.1. Product identifier

Product name	STOPGAP F77 HARDENER
Product number	F3679
Internal identification	SGF77H/4

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

Identified uses	Hardener.
Uses advised against	None

1.3. Details of the supplier of the safety data sheet

Supplier	F.Ball and Co. Ltd. Churnetside Business Park, Station Road, Cheddleton, Leek, Staffordshire. ST13 7RS Tel: 01538 361633 Mon-Fri 8.30am-5.00pm (Exc Bank Holidays) Fax: 01538 361622 E.mail: msds@f-ball.co.uk
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1.4. Emergency telephone number

Emergency telephone	01538 361633 Mon-Fri 8.30am - 5.00pm (excluding Bank Holidays)
National emergency telephone number	UK - National Poisons Information Service Call 111 Ireland - National Poisons Information Centre Call +353 1 809 2166

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Not Classified
Health hazards	Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Repr. 1B - H360
Environmental hazards	Aquatic Chronic 3 - H412

Human health	The product contains a sensitising substance. May cause sensitisation or allergic reactions in sensitive individuals. This product can cause burns, Contains a substance with possible risk of impaired fertility.
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Environmental	Harmful to aquatic life with long lasting effects.
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2.2. Label elements

STOPGAP F77 HARDENER

Hazard pictograms



Signal word

Danger

Hazard statements

H314 Causes severe skin burns and eye damage.
 H317 May cause an allergic skin reaction.
 H360 May damage fertility or the unborn child.
 H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P260 Do not breathe vapour/ spray.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
 P284 [In case of inadequate ventilation] wear respiratory protection.
 P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P313 Get medical advice/ attention.

Contains

3-AMINOPROPYLDIMETHYLAMINE, 4,4'-ISOPROPYLIDENEDIPHENOL, 3-AMINOMETHYL-3, 5, 5 - TRIMETHYLCYCLOHEXYLAMINE, M-PHENYLENEBIS(METHYLAMINE), 3-AMINOPROPYLTRIETHOXYSILANE

Supplementary precautionary statements

P264 Wash contaminated skin thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P271 Use only outdoors or in a well-ventilated area.
 P405 Store locked up.
 P501 Dispose of contents/ container in accordance with national regulations.

2.3. Other hazards

SECTION 3: Composition/information on ingredients

3.2. Mixtures

BENZYL ALCOHOL 10-30%		
CAS number: 100-51-6	EC number: 202-859-9	REACH registration number: 01-2119492630-38-0000
Classification		
Acute Tox. 4 - H302		
Acute Tox. 4 - H332		
2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL 10-30%		
CAS number: 90-72-2	EC number: 202-013-9	
Classification		
Acute Tox. 4 - H302		
Skin Irrit. 2 - H315		
Eye Irrit. 2 - H319		

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4,4'-ISOPROPYLIDENEDIPHENOL	1-5%
CAS number: 80-05-7	EC number: 201-245-8
Classification	
Eye Dam. 1 - H318	
Skin Sens. 1 - H317	
Repr. 1B - H360F	
STOT SE 3 - H335	
3-AMINOMETHYL-3, 5, 5 - TRIMETHYLCYCLOHEXYLAMINE	1-5%
CAS number: 2855-13-2	EC number: 220-666-8
	REACH registration number: 01-2119514687-32-0000
Classification	
Acute Tox. 4 - H302	
Acute Tox. 4 - H312	
Skin Corr. 1B - H314	
Eye Dam. 1 - H318	
Skin Sens. 1 - H317	
Aquatic Chronic 3 - H412	
3-AMINOPROPYLDIMETHYLAMINE	1-5%
CAS number: 109-55-7	EC number: 203-680-9
	REACH registration number: 01-2119486842-27-0000
Classification	
Flam. Liq. 3 - H226	
Acute Tox. 4 - H302	
Skin Corr. 1B - H314	
Eye Dam. 1 - H318	
Skin Sens. 1 - H317	
M-PHENYLENEBIS(METHYLAMINE)	1-5%
CAS number: 1477-55-0	EC number: 216-032-5
	REACH registration number: 01-2119480150-50-0000
Classification	
Acute Tox. 4 - H302	
Acute Tox. 3 - H331	
Skin Corr. 1B - H314	
Skin Sens. 1 - H317	
Aquatic Chronic 3 - H412	

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3-AMINOPROPYLTRIETHOXYSILANE	1-5%
CAS number: 919-30-2	EC number: 213-048-4
Classification Acute Tox. 4 - H302 Skin Corr. 1B - H314 Eye Dam. 1 - H318	

The full text for all hazard statements is displayed in Section 16.

Composition comments Epoxy hardener in organic solvent

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	Remove affected person from source of contamination.
Inhalation	Move affected person to fresh air at once. Get medical attention if any discomfort continues.
Ingestion	Rinse mouth thoroughly with water. Give plenty of water to drink. Do not induce vomiting. Get medical attention immediately.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation persists after washing.
Eye contact	Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes and get medical attention.

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

General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Vapours may cause headache, fatigue, dizziness and nausea.
Ingestion	May cause discomfort if swallowed.
Skin contact	Prolonged skin contact may cause redness and irritation. May cause serious chemical burns to the skin. May cause an allergic skin reaction.
Eye contact	Irritation, burning, lachrymation, blurred vision after liquid splash. May cause serious eye damage.

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

Notes for the doctor Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with foam, carbon dioxide or dry powder.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards	Toxic gases/vapours/fumes of: Oxides of the following substances: Carbon. Nitrogen.
Hazardous combustion products	Oxides of carbon. Oxides of nitrogen.

5.3. Advice for firefighters

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Protective actions during firefighting No specific firefighting precautions known.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Provide adequate ventilation. Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Avoid contact with skin and eyes.

6.2. Environmental precautions

Environmental precautions Avoid the spillage or runoff entering drains, sewers or watercourses. Avoid discharge into drains or watercourses or onto the ground. Contain spillages with sand, earth or any suitable absorbent material.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Absorb spillage with sand or other inert absorbent. Collect spillage in containers, seal securely and deliver for disposal as hazardous waste.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health hazards. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Provide adequate ventilation. Good personal hygiene procedures should be implemented. Do not eat, drink or smoke when using the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Keep separate from food, feedstuffs, fertilisers and other sensitive material. Store in closed original container at temperatures between 5°C and 30°C. Store in a cool and well-ventilated place.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

4,4'-ISOPROPYLIDENEDIPHENOL

Occupational Exposure Limit Value (8-hour reference period) 2 mg/m³

BENZYL ALCOHOL (CAS: 100-51-6)

DNEL Workers - Dermal; : 9.5 mg/kg
Workers - Inhalation; : 90 mg/m³

PNEC - Fresh water; 1.0 mg/l
- marine water; 0.1 mg/l

3-AMINOMETHYL-3, 5, 5 - TRIMETHYLCYCLOHEXYLAMINE (CAS: 2855-13-2)

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DNEL Workers - Inhalation; : 20.1 mg/m³

PNEC - Fresh water; 0.06 mg/l
- marine water; 0.006 mg/l

4,4'-ISOPROPYLIDENEDIPHENOL (CAS: 80-05-7)

DNEL Workers - Dermal; : 1.4 mg/kg
Workers - Inhalation; : 10 mg/m³

PNEC - Fresh water; 0.018 mg/l
- marine water; 0.016 mg/l

M-PHENYLENEBIS(METHYLAMINE) (CAS: 1477-55-0)

PNEC - Fresh water; 0.094 mg/l
- marine water; 0.0094 mg/l

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate general and local exhaust ventilation.

Personal protection

Always check applicability with your supplier of protective equipment.

Eye/face protection

If there is a risk of splashing, wear chemical resistant goggles or visor approved to BS EN166.

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. Nitrile gloves to BSEN374 are recommended. Break through times can vary depending on thickness, use and source. Change gloves regularly.

Other skin and body protection

Wear suitable protective clothing as protection against splashing or contamination. Wear apron or protective clothing in case of contact.

Hygiene measures

Provide eyewash station. Promptly remove any clothing that becomes contaminated. Wash promptly with soap and water if skin becomes contaminated. Wash contaminated clothing before reuse.

Respiratory protection

In case of inadequate ventilation use a respirator suitable for organic vapours. Consult respirator manufacturer for specific advice.

Environmental exposure controls

Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Yellowish.
Odour	Amine.
Odour threshold	Not determined.
pH	Not applicable.

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Melting point	Not applicable.
Initial boiling point and range	Not determined.
Flash point	Not determined.
Evaporation rate	Not determined.
Evaporation factor	Not determined.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	Not applicable.
Other flammability	Not applicable.
Vapour pressure	Not determined.
Vapour density	Not determined.
Relative density	1 approx. @ 23°C
Bulk density	Not determined.
Solubility(ies)	Insoluble in water.
Partition coefficient	Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition Temperature	Not determined.
Viscosity	750 - 1500 cP @ 23°C
Explosive properties	Not applicable.
Explosive under the influence of a flame	Not considered to be explosive.
Oxidising properties	Not determined.
Comments	Information given is applicable to the product in its ready-to-use form.

9.2. Other information

Other information	None.
Refractive index	Not determined.
Particle size	Not applicable.
Molecular weight	Not determined.
Volatility	Not determined.
Saturation concentration	Not applicable.
Critical temperature	Not determined.
Volatile organic compound	Not determined.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	The following materials may react with the product: Acids. Strong alkalis. Strong oxidising agents.
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10.2. Chemical stability

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Stability Stable at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Under normal conditions of storage and use, hazardous reactions will not occur.

10.4. Conditions to avoid

Conditions to avoid Considerable exothermic reaction can occur when mixed with epoxide resins

10.5. Incompatible materials

Materials to avoid Strong acids. Strong alkalis. Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products Oxides of carbon. Oxides of nitrogen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects No information available.

Acute toxicity - oral

Notes (oral LD₅₀) No specific test data are available.

ATE oral (mg/kg) 3,965.42

Acute toxicity - dermal

Notes (dermal LD₅₀) No specific test data are available.

ATE dermal (mg/kg) 50,348.43

Acute toxicity - inhalation

Notes (inhalation LC₅₀) No specific test data are available.

Skin corrosion/irritation

Skin corrosion/irritation Corrosive to skin. Causes severe burns.

Animal data No specific test data are available.

Human skin model test No specific test data are available.

Extreme pH No specific test data are available.

Serious eye damage/irritation

Serious eye damage/irritation Corrosivity to eyes is assumed.

Respiratory sensitisation

Respiratory sensitisation No specific test data are available.

Skin sensitisation

Skin sensitisation Sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro No specific test data are available.

Genotoxicity - in vivo No specific test data are available.

Carcinogenicity

Carcinogenicity No specific test data are available.

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IARC carcinogenicity Not listed.

Reproductive toxicity

Reproductive toxicity - fertility Suspected of damaging fertility.

Specific target organ toxicity - single exposure

STOT - single exposure No specific test data are available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No specific test data are available.

Aspiration hazard

Aspiration hazard Not relevant.

General information

Extensive use of the product in areas with inadequate ventilation may result in the accumulation of hazardous vapour concentrations.

Inhalation

Vapours may cause headache, fatigue, dizziness and nausea.

Ingestion

May cause chemical burns in mouth, oesophagus and stomach.

Skin contact

Causes burns. May cause sensitisation by skin contact.

Eye contact

May cause chemical eye burns.

Acute and chronic health hazards

This product is corrosive. This product may cause skin and eye irritation. Prolonged contact may cause burns. Prolonged inhalation of high concentrations may damage respiratory system. May cause sensitisation by skin contact. Frequent inhalation of vapours may cause respiratory allergy. Suspected of damaging fertility.

Route of exposure

Skin and/or eye contact Inhalation

Target organs

Eyes Respiratory system, lungs Skin Reproductive organs

Medical symptoms

Chemical burns. May cause discomfort if swallowed. General respiratory distress, unproductive cough. Severe skin irritation.

Medical considerations

Pre-existing eye problems. Skin disorders and allergies. Chronic respiratory and obstructive airway diseases.

Toxicological information on ingredients.

3-AMINOMETHYL-3, 5, 5 - TRIMETHYLCYCLOHEXYLAMINE

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 1,840.0

Species Rabbit

3-AMINOPROPYLDIMETHYLAMINE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 1,600.0

Species Rat

Acute toxicity - dermal

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Acute toxicity dermal (LD₅₀ 1,200.0 mg/kg)

Species Rat

M-PHENYLENEBIS(METHYLAMINE)

Acute toxicity - oral

Acute toxicity oral (LD₅₀ 930.0 mg/kg)

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ 2,000.0 mg/kg)

Species Rabbit

Notes (dermal LD₅₀) LD₅₀ 3100 mg/kg, Dermal, Rabbit

Acute toxicity - inhalation

ATE inhalation (vapours 3.0 mg/l)

SECTION 12: Ecological information

Ecotoxicity The product should not be allowed to enter drains, sewers or watercourses.

12.1. Toxicity

Toxicity Not measured. Do not allow to enter waterways or drains

Acute aquatic toxicity

Acute toxicity - fish Not determined

Acute toxicity - aquatic invertebrates Not determined.

Acute toxicity - aquatic plants Not determined.

Acute toxicity - microorganisms Not determined.

Acute toxicity - terrestrial Not determined.

Chronic aquatic toxicity

Chronic toxicity - fish early life stage Not determined.

Short term toxicity - embryo and sac fry stages Not determined.

Chronic toxicity - aquatic invertebrates Not determined.

Ecological information on ingredients.

3-AMINOMETHYL-3, 5, 5 - TRIMETHYLCYCLOHEXYLAMINE

Acute aquatic toxicity

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Acute toxicity - fish	LC50, 96 hours: 110 mg/l, Brachydanio rerio (Zebra Fish)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 23 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: 50 mg/l, Scenedesmus subspicatus

3-AMINOPROPYLDIMETHYLAMINE

Acute aquatic toxicity

Acute toxicity - fish	LC50, 96 hours: 122 mg/l, Leuciscus idus (Golden orfe)
Acute toxicity - aquatic invertebrates	EC ₅₀ , : 44.5 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: 56.2 mg/l, Scenedesmus subspicatus
Acute toxicity - microorganisms	EC ₅₀ , 30 minutes: > 1000 mg/l, Activated sludge

M-PHENYLENEBIS(METHYLAMINE)

Acute aquatic toxicity

Acute toxicity - fish	LC50, 96 hours: > 100 mg/l, Oncorhynchus mykiss (Rainbow trout) LC ₅₀ , 96 hours: > 100 mg/l, Brachydanio rerio (Zebra Fish) LC ₅₀ , 96 hours: 87.6 mg/l, Oryzias latipes (Red killifish)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 15.2 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: 20.3 mg/l, Selenastrum capricornutum

12.2. Persistence and degradability

Persistence and degradability There are no data on the degradability of this product.

Phototransformation Not determined.

Stability (hydrolysis) Not determined.

Biodegradation Not determined.

Biological oxygen demand Not determined.

Chemical oxygen demand Not determined.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Not applicable.

12.4. Mobility in soil

Mobility The product is non-volatile.

Adsorption/desorption coefficient Not determined.

Henry's law constant Not determined.

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Surface tension Not determined.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal methods Small quantities may be treated with an equivalent quantity of product resin, allowed to cure and disposed of as low hazard waste. Larger quantities should be disposed of as hazardous waste via a licensed waste operator. Product containers must not be re-used without commercial cleaning.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID) 2735

UN No. (IMDG) 2735

UN No. (ICAO) 2735

UN No. (ADN) 2735

14.2. UN proper shipping name

Proper shipping name (ADR/RID) AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS 3-AMINOMETHYL-3, 5, 5 - TRIMETHYLCYCLOHEXYLAMINE, 3-AMINOPROPYLDIMETHYLAMINE)

Proper shipping name (IMDG) AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS 3-AMINOMETHYL-3, 5, 5 - TRIMETHYLCYCLOHEXYLAMINE, 3-AMINOPROPYLDIMETHYLAMINE)

Proper shipping name (ICAO) AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS 3-AMINOMETHYL-3, 5, 5 - TRIMETHYLCYCLOHEXYLAMINE, 3-AMINOPROPYLDIMETHYLAMINE)

Proper shipping name (ADN) AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS 3-AMINOMETHYL-3, 5, 5 - TRIMETHYLCYCLOHEXYLAMINE, 3-AMINOPROPYLDIMETHYLAMINE)

14.3. Transport hazard class(es)

ADR/RID class 8

ADR/RID classification code C7

ADR/RID label 8

IMDG class 8

ICAO class/division 8

ADN class 8

Transport labels



14.4. Packing group

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ADR/RID packing group	II
IMDG packing group	II
ICAO packing group	II
ADN packing group	II

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

IMDG Code segregation group	18. Alkalis
EmS	F-A, S-B
ADR transport category	2
Emergency Action Code	2X
Hazard Identification Number (ADR/RID)	80
Tunnel restriction code	(E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

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

National regulations	No listing known.
Guidance	Safety Data Sheets for Substances and Preparations.
Authorisations (Annex XIV Regulation 1907/2006)	No specific authorisations are known for this product.
Restrictions (Annex XVII Regulation 1907/2006)	No specific restrictions on use are known for this product.

15.2. Chemical safety assessment

SECTION 16: Other information

General information	F.Ball and Company Ltd Technical Datasheet.
Key literature references and sources for data	Health and Safety Executive Guidance Note EH40 (amended annually). Workplace Exposure Limits.
Revision comments	Section 1 update Section 14 update
Revision date	20/03/2019
Revision	4
Supersedes date	18/02/2016
SDS status	Approved.

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Hazard statements in full

H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H360 May damage fertility or the unborn child.
H360F May damage fertility.
H412 Harmful to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.