

SAFETY DATA SHEET
FortiFlash-Fiber

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200

1. Identification**Product identifier****Product name** FortiFlash-Fiber**Recommended use of the chemical and restrictions on use****Application** Coating for spray polyurethane foam.**Uses advised against** No specific uses advised against are identified.**Details of the supplier of the safety data sheet****Supplier** FortiSystems
16601 Central Green Blvd., Ste.100
Houston, TX 77032
USA
T: 833.840.2777**Emergency telephone number****Emergency telephone** 832.922.2926**2. Hazard(s) identification****Classification of the substance or mixture****Physical hazards** Not Classified**Health hazards** Carc. 1A - H350**Environmental hazards** Not Classified**Label elements****Pictogram****Signal word** Danger**Hazard statements** H350 May cause cancer.**Precautionary statements** P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P308+P313 If exposed or concerned: Get medical advice/ attention.
P405 Store locked up.
P501 Dispose of contents/ container in accordance with national regulations.**Contains** Quartz (SiO₂)**Other hazards**

This product does not contain any substances classified as PBT or vPvB.

3. Composition/information on ingredients**Mixtures**

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Limestone CAS number: 1317-65-3	25 - <50%
Classification Not Classified	
Titanium dioxide CAS number: 13463-67-7	2.5 - <5%
Classification Not Classified	
Quartz (SiO₂) CAS number: 14808-60-7	0.25 - <0.5%
Classification Carc. 1A - H350 STOT RE 1 - H372	
Ammonia CAS number: 1336-21-6 M factor (Acute) = 1	0.025 - <0.25%
Classification Skin Corr. 1B - H314 Eye Dam. 1 - H318 STOT SE 3 - H335 Aquatic Acute 1 - H400	
Diiron trioxide CAS number: 1309-37-1	0.025 - <0.25%
Classification Not Classified	
Carbon black CAS number: 1333-86-4	0.025 - <0.25%
Classification Not Classified	

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2-Butoxyethanol	<0.025%
CAS number: 111-76-2	
Classification Acute Tox. 4 - H302 Acute Tox. 4 - H312 Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2A - H319	

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

Composition comments The exact percentage is withheld as a trade secret in accordance with 29 CFR 1910.1200.

4. First-aid measures

Description of first aid measures

General information	Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.
Inhalation	Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place.
Ingestion	Rinse mouth thoroughly with water. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Place unconscious person on their side in the recovery position and ensure breathing can take place.
Skin Contact	Wash skin thoroughly with soap and water.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.
Protection of first aiders	First aid personnel should wear appropriate protective equipment during any rescue. If it is suspected that volatile contaminants are still present around the affected person, first aid personnel should wear an appropriate respirator or self-contained breathing apparatus. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed

General information	See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Prolonged inhalation of high concentrations may damage respiratory system. Prolonged or repeated exposure may cause the following adverse effects: May cause cancer.
Ingestion	Gastrointestinal symptoms, including upset stomach.
Skin contact	Prolonged contact may cause dryness of the skin. Discoloration of the skin.
Eye contact	May cause temporary eye irritation.

Indication of immediate medical attention and special treatment needed

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Notes for the doctor Treat symptomatically.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Special hazards arising from the substance or mixture

Specific hazards Containers can burst violently or explode when heated, due to excessive pressure build-up.

Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors. Acrylic monomers. Carbon dioxide (CO₂). Carbon monoxide (CO).

Advice for firefighters

Protective actions during firefighting Avoid breathing fire gases or vapors. Evacuate area. Keep upwind to avoid inhalation of gases, vapors, fumes and smoke. Ventilate closed spaces before entering them. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapors and protect men stopping the leak. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Do not touch or walk into spilled material. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Ensure procedures and training for emergency decontamination and disposal are in place. Wash thoroughly after dealing with a spillage.

Environmental precautions

Environmental precautions Avoid discharge into drains and the aquatic environment.

Methods and material for containment and cleaning up

Methods for cleaning up Do not touch or walk into spilled material. Wear protective clothing as described in Section 8 of this safety data sheet. Absorb spillage with non-combustible, absorbent material. The contaminated absorbent may pose the same hazard as the spilled material. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Flush contaminated area with plenty of water. For waste disposal, see Section 13. Wash thoroughly after dealing with a spillage.

Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

7. Handling and storage

Precautions for safe handling

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Usage precautions Read and follow manufacturer's recommendations. Keep away from food, drink and animal feeding stuffs. Provide adequate ventilation. Wear protective clothing as described in Section 8 of this safety data sheet. Handle all packages and containers carefully to minimize spills. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Keep container tightly sealed when not in use. Do not reuse empty containers.

Advice on general occupational hygiene Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

Conditions for safe storage, including any incompatibilities

Storage precautions Store away from incompatible materials (see Section 10). Store in tightly-closed, original container in a dry, cool and well-ventilated place. Store locked up. Keep containers upright. Protect containers from damage. Utilize retaining walls to prevent soil and water pollution in the event of spillage. The storage area floor should be leak-tight, jointless and not absorbent. Store at temperatures between 1°C and 49°C. Do not store for more than 12 months.

Storage class Chemical storage.

Specific end uses(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.

8. Exposure Controls/personal protection

Control parameters

Occupational exposure limits

Limestone

Long-term exposure limit (8-hour TWA): OSHA 5 mg/m³ respirable fraction

Long-term exposure limit (8-hour TWA): OSHA 15 mg/m³ total dust

Titanium dioxide

Long-term exposure limit (8-hour TWA): ACGIH 10 mg/m³

A4

Long-term exposure limit (8-hour TWA): OSHA 15 mg/m³ total dust

Quartz (SiO₂)

Long-term exposure limit (8-hour TWA): ACGIH 0.025 mg/m³ respirable fraction

A2

Ammonia

Long-term exposure limit (8-hour TWA): ACGIH 25 ppm 17 mg/m³

Short-term exposure limit (15-minute): ACGIH 35 ppm 24 mg/m³

Long-term exposure limit (8-hour TWA): OSHA 50 ppm 35 mg/m³

Diiron trioxide

Long-term exposure limit (8-hour TWA): ACGIH 5 mg/m³ respirable fraction

A4

Long-term exposure limit (8-hour TWA): OSHA 5 mg/m³ respirable fraction

Long-term exposure limit (8-hour TWA): OSHA 15 mg/m³ total dust

Long-term exposure limit (8-hour TWA): OSHA 10 mg/m³ fume

Carbon black

Long-term exposure limit (8-hour TWA): ACGIH 3 mg/m³ inhalable fraction

A3

Long-term exposure limit (8-hour TWA): OSHA 3.5 mg/m³

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2-Butoxyethanol

Long-term exposure limit (8-hour TWA): OSHA 50 ppm 240 mg/m³

Sk

Long-term exposure limit (8-hour TWA): ACGIH 20 ppm 97 mg/m³

A3

OSHA = Occupational Safety and Health Administration.

ACGIH = American Conference of Governmental Industrial Hygienists.

A4 = Not Classifiable as a Human Carcinogen.

A2 = Suspected Human Carcinogen.

A3 = Confirmed Animal Carcinogen with Unknown Relevance to Humans.

Sk = Danger of cutaneous absorption.

Titanium dioxide (CAS: 13463-67-7)

**Immediate danger to life
and health** 5000 mg/m³

Quartz (SiO₂) (CAS: 14808-60-7)

**Immediate danger to life
and health** 50 mg/m³ 25 mg/m³

Ammonia (CAS: 1336-21-6)

**Immediate danger to life
and health** 300 ppm

Diiron trioxide (CAS: 1309-37-1)

**Immediate danger to life
and health** 2500 mg/m³

Carbon black (CAS: 1333-86-4)

**Immediate danger to life
and health** 1750 mg/m³

Silicon dioxide (CAS: 7631-86-9)

**Immediate danger to life
and health** 3000 mg/m³

2-Butoxyethanol (CAS: 111-76-2)

**Immediate danger to life
and health** 700 ppm

Exposure controls

Protective equipment



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Appropriate engineering controls	Provide adequate ventilation. Personal, workplace environment or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimize worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimize exposure.
Eye/face protection	Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with OSHA 1910.133. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with OSHA 1910.138 and be demonstrated to be impervious to the chemical and resist degradation. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.
Other skin and body protection	Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.
Hygiene measures	Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Warn cleaning personnel of any hazardous properties of the product.
Respiratory protection	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is NIOSH approved. Check that the respirator fits tightly and the filter is changed regularly.
Environmental exposure controls	Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Liquid.
Color	Various colors.
Odor	Amine.
Odor threshold	Not available.
pH	Not available.
Melting point	Not available.
Initial boiling point and range	100°C
Flash point	Not applicable. Water based product. Solid material will support combustion if water has been evaporated.

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Evaporation rate	Not available.
Upper/lower flammability or explosive limits	Not available.
Vapor pressure	17 mm Hg @ 20°C
Vapor density	Not available.
Relative density	1.44
Solubility(ies)	Not known.
Partition coefficient	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	Not applicable.
Explosive properties	Not considered to be explosive.
Oxidizing properties	Does not meet the criteria for classification as oxidizing.
Other information	No information required.

10. Stability and reactivity

Reactivity	See the other subsections of this section for further details.
Stability	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
Possibility of hazardous reactions	No potentially hazardous reactions known.
Conditions to avoid	Avoid exposure to high temperatures or direct sunlight. Avoid freezing.
Materials to avoid	No specific material or group of materials is likely to react with the product to produce a hazardous situation.
Hazardous decomposition products	Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors. Acrylic monomers. Carbon dioxide (CO ₂). Carbon monoxide (CO).

11. Toxicological information

Information on toxicological effects

Acute toxicity - oral

Notes (oral LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Based on available data the classification criteria are not met.

Skin corrosion/irritation

Animal data Based on available data the classification criteria are not met.

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Serious eye damage/irritation

Serious eye damage/irritation Based on available data the classification criteria are not met.

Respiratory sensitization

Respiratory sensitization Based on available data the classification criteria are not met.

Skin sensitization

Skin sensitization Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity May cause cancer.

IARC carcinogenicity

Contains a substance/a group of substances which may cause cancer. IARC Group 1
Carcinogenic to humans.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Reproductive toxicity - development Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

General information

May cause cancer after repeated exposure. Risk of cancer depends on duration and level of exposure. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation

Prolonged inhalation of high concentrations may damage respiratory system.

Ingestion

Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.

Skin Contact

Prolonged contact may cause dryness of the skin. Discoloration of the skin.

Eye contact

May cause temporary eye irritation.

Route of exposure

Ingestion Inhalation Skin and/or eye contact

Target Organs

No specific target organs known.

12. Ecological Information

Ecotoxicity

Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

Toxicity

Based on available data the classification criteria are not met.

Persistence and degradability

Persistence and degradability The degradability of the product is not known.

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Bioaccumulative potential

Bio-Accumulative Potential No data available on bioaccumulation.

Partition coefficient Not available.

Mobility in soil

Mobility No data available.

Other adverse effects

Other adverse effects None known.

13. Disposal considerations

Waste treatment methods

General information Reuse or recycle products wherever possible. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

Disposal methods Do not empty into drains. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labeled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

14. Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, DOT).

UN Number

Not applicable.

UN No. (DOT) Not applicable.

UN proper shipping name

Not applicable.

Proper shipping name (DOT) Not applicable.

Transport hazard class(es)

No transport warning sign required.

DOT transport labels

No transport warning sign required.

Packing group

Not applicable.

DOT packing group Not applicable.

Environmental hazards

Environmentally Hazardous Substance

No.

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Special precautions for user

Not applicable.

DOT reportable quantity Not applicable.

DOT TIH Zone Not applicable.

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

15. Regulatory information

Regulatory Status Classified in accordance with Appendix A, Appendix B and Appendix F of the OSHA Hazard Communication Standard 29 CFR §1910.1200.

Regulatory References OSHA Hazard Communication Standard 29 CFR §1910.1200

US Federal Regulations

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities

None of the ingredients are listed or exempt.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

The following ingredients are listed or exempt:

Ammonia

Final CERCLA RQ: 1000(454) pounds (Kilograms)

SARA Extremely Hazardous Substances EPCRA Reportable Quantities

None of the ingredients are listed or exempt.

SARA 313 Emission Reporting

The following ingredients are listed or exempt:

Ammonia

1.0 %

2-Butoxyethanol

1.0 %

CAA Accidental Release Prevention

None of the ingredients are listed or exempt.

FDA - Essential Chemical

None of the ingredients are listed or exempt.

FDA - Precursor Chemical

None of the ingredients are listed or exempt.

SARA (311/312) Hazard Categories

None of the ingredients are listed or exempt.

OSHA Highly Hazardous Chemicals

None of the ingredients are listed or exempt.

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins

The following ingredients are listed or exempt:

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Benzophenone

Known to the State of California to cause cancer.

Carbon black

Known to the State of California to cause cancer.

Titanium dioxide

Known to the State of California to cause cancer.

Silicon dioxide

Known to the State of California to cause cancer.

California Air Toxics "Hot Spots" (A-I)

The following ingredients are listed or exempt:

2-Butoxyethanol

Silicon dioxide

California Air Toxics "Hot Spots" (A-II)

None of the ingredients are listed or exempt.

California Directors List of Hazardous Substances

The following ingredients are listed or exempt:

Ammonia

2-Butoxyethanol

Carbon black

Diiron trioxide

Silicon dioxide

Massachusetts "Right To Know" List

The following ingredients are listed or exempt:

Ammonia

Quartz (SiO₂)

Limestone

2-Butoxyethanol

Carbon black

Titanium dioxide

Diiron trioxide

Silicon dioxide

Rhode Island "Right To Know" List

The following ingredients are listed or exempt:

Quartz (SiO₂)

Limestone

2-Butoxyethanol

Propane-1,2-diol

Carbon black

Titanium dioxide

Diiron trioxide

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Minnesota "Right To Know" List

The following ingredients are listed or exempt:

Benzophenone

Quartz (SiO₂)

Limestone

2-Butoxyethanol

Propane-1,2-diol

Carbon black

Titanium dioxide

Diiron trioxide

Silicon dioxide

New Jersey "Right To Know" List

The following ingredients are listed or exempt:

Ammonia

Quartz (SiO₂)

Limestone

2-Butoxyethanol

Propane-1,2-diol

Carbon black

Titanium dioxide

Diiron trioxide

Pennsylvania "Right To Know" List

The following ingredients are listed or exempt:

Ammonia

Quartz (SiO₂)

Limestone

2-Butoxyethanol

Propane-1,2-diol

Carbon black

Titanium dioxide

Titanium dioxide (Rutile)

Diiron trioxide

Silicon dioxide

Inventories

US - TSCA

The following ingredients are listed or exempt:

Ammonia

Water

Distillates (petroleum), solvent-dewaxed heavy paraffinic

Benzophenone

Quartz (SiO₂)

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Limestone

2,4,7,9-Tetramethyldec-5-yne-4,7-diol

2-Butoxyethanol

Propane-1,2-diol

Carbon black

Potassium triphosphate anhydrous

Tetrapotassium pyrophosphate

Dipotassium hydrogenorthophosphate

Isobutyric acid, monoester with 2,2,4-trimethylpentane-1,3-diol

Titanium dioxide

Titanium dioxide (Rutile)

Diiron trioxide

Silicon dioxide

US - TSCA 12(b) Export Notification

The following ingredients are listed or exempt:

Benzophenone

Note: Based on information provided by our suppliers, this product is considered "DRC Conflict Free" as defined by the SEC Conflict Minerals Final Rule (Release No. 34-67716; File No. S7-40-10; Date: 2012-08-22).

16. Other information

Classification abbreviations and acronyms Carc. = Carcinogenicity

Training advice Read and follow manufacturer's recommendations. Only trained personnel should use this material.

Revision date 8/25/2017

Revision 2

Supersedes date 5/27/2015

SDS No. 6110

Hazard statements in full

- H302 Harmful if swallowed.
- H312 Harmful in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled.
- H335 May cause respiratory irritation.
- H350 May cause cancer.
- H372 Causes damage to organs through prolonged or repeated exposure.
- H400 Very toxic to aquatic life.

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.