

**SAFETY DATA SHEET**

Prepared according to the European Commission Regulations (EU) No. 2015/830

**SUBSTANCE:** Post Fix system HILST Part B**Date of filling:** 05 11 2016**Last revision date:**–**Version No.:** 1

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**SAFETY DATA SHEET****Section 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

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**1.1. PRODUCT IDENTIFIER****Product name:** Post Fix system HILST Part B**CAS-No.** 9016-87-9**REACH registration number:** 618-498-9**RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST****Relevant identified uses:** is designed to perform construction work (e.g. installation of columns, lights, power lines, fences etc.), as a substitute for concrete gravel, sand, earth or other filling.**Uses advised against:** No available.**1.2. DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET****Manufacturer:**

«Largo Enterprise» LTD

26A, Metallistov str., Ulyanovsk, Russia, 432051

**Electronic mail address of the person, responsible for the safety data sheet:**

info@hilst.ru

**1.3. HELPDESK TELEPHONE NUMBER:**

Poison Control Centre (Austria)

Tel. No.: +43 1 406 4343

Antigif Centrum Centre Antipoisons (Belgium)

Tel. No.: +32 070 245 045

National Toxicology Center, Hospital for Active Medical Treatment and Emergency Medicine  
"N.I.Pirogov" (Bulgaria)

Tel. No. / fax.: +359 2 9154 233

Poison Control Centre (Croatia)

Tel. No.: +385 1 234 8342

Toxicological Information Centre (Czech Republic)

Tel. No.: +420 224 919 293 / +420 224 915 402

Poison Control Hotline (Denmark)

Tel. No.: +45 82 12 12 12

Poisoning Information Centre (Estonia)

Tel. No.: +372 626 93 90

Poison Information Centre (Finland)

Tel. No.: +358 09 471 977

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ORFILA (INERIS) (France)

Tel. No.: + 33 (0) 1 45 42 59 59

Health Toxicological Information Service (Hungary)

Tel. No.: +36 80 20 11 99

Poison Centre (Iceland)

Tel. No.: +354 543 2222

National Poisons Information Centre (Ireland)

Tel. No.: + 353 (0)1 809 2566 / + 353 (0)1 837 9964

Valsts Toksikoloģijas centrs, Saindēšanās un zāļu informācijas centrs (Latvia)

Tel. No.: +371 670 42473

Health Emergency Situations Centre of the Ministry of Health, Poison Information Bureau (Lithuania)

Tel. No.: +370 5 236 20 52, mob.: +370 687 53378

Mater Dei Hospital (Malta)

Tel. No.: +356 2545 0000

National Poisons Information Centre (NVIC) (Netherlands)

Tel. No.: +31 (0) 30 274 8888

Mental Health Helpline (Norway)

Tel. No.: +47 22 59 13 00

Instituto Nacional de Emergência Médica (Portugal)

Tel. No.: + 351 213 303 271

Biroul RSI si Informare Toxicologica (Romania)

Tel. No.: +40 021 318 3606

National Toxicological Information Centre (NTIC) (Slovakia)

Tel. No.: +421 2 5477 4166

Toxicology Information Service (Spain)

Tel. No.: + 34 91 562 04 20

Swedish Poisons Information Centre (Sweden)

Tel. No.: +46 08 331231

Health and Safety Executive (HSE) (United Kingdom)

Tel. No.: +44 0151 922 9235

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**Section 2. HAZARDS IDENTIFICATION**

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**2.1. CLASSIFICATION OF THE SUBSTANCE OR MIXTURE****2.1.1. Classification according to Regulation (EC) No. 1272/2008 [CLP]**

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### Classification - REGULATION (EC) No 1272/2008

Acute Tox. 4 - H332

Skin Irrit. 2 - H315

Eye Irrit. 2 - H319

Resp. Sens. 1 - H334

Skin Sens. 1 - H317

Carc. 2 - H351

STOT SE 3 - H335

STOT RE 2 - H373

#### 2.1.2. Additional information:

For full text of Hazard- and EU Hazard-statements: see section 16.

### 2.2. LABEL ELEMENTS

#### Label according to Regulation (EC) No. 1272/2008 [CLP]

##### Hazard pictogram(s)



**Signal word** Danger

#### Hazard statements

**H332** Harmful if inhaled.

**H315** Causes skin irritation.

**H319** Causes serious eye irritation.

**H334** May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**H317** May cause an allergic skin reaction.

**H335** May cause respiratory irritation.

**H351** Suspected of causing cancer.

**H373** May cause damage to organs through prolonged or repeated exposure.

#### Precautionary statements

**P280** Wear protective gloves/ protective clothing/ eye protection/ face protection.

**P260** Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

**P270** Do not eat, drink or smoke when using this product.

**P202** Do not handle until all safety precautions have been read and understood.

**P305 + P351 + P338** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**P303 + P361 + P353** IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

**P304 + P340** IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

**P308 + P313** IF exposed or concerned: Get medical advice/ attention.

**P403 + P233** Store in a well-ventilated place. Keep container tightly closed.

**P501** Dispose of contents and container to licensed, permitted incinerator, or other thermal destruction device.

**Supplemental Hazard information (EU):** Contains isocyanates. May produce an allergic reaction.

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**2.3. OTHER HAZARDS**

Substance does not meet the criteria for vPvB according to Regulation (EC) No. 1907/2006.

**Section 3. COMPOSITION INFORMATION ON INGREDIENTS****3.1. SUBSTANCES**

Ingredient name	CAS No.	EC / List No.	Classification:	Concentration (%)
			CLP	
Diphenylmethane Diisocyanate, isomers and homologues	9016-87-9	618-498-9	Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Resp. Sens. 1 - H334 Skin Sens. 1 - H317 Carc. 2 - H351 STOT SE 3 - H335 STOT RE 2 - H373	100%

**3.2. MIXTURES****Additional information:** For full text of H-statements: see section 16.**Section 4. FIRST AID MEASURES****4.1. DESCRIPTION OF FIRST AID MEASURES****GENERAL ADVICE:** First aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.**INHALATION:** Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.**SKIN CONTACT:** Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. An MDI skin decontamination study demonstrated that cleaning very soon after exposure is important, and that a polyglycol-based skin cleanser or corn oil may be more effective than soap and water. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.**EYE CONTACT:** Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.**INGESTION :** If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

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After first aid, get appropriate in-plant, paramedic, or community medical support. Note to Physicians: Symptomatic and supportive therapy may be needed following severe exposure. In such cases, medical follow-up should be maintained for at least 48 hours.

**Special Precautions/Procedures:** Store in sealed containers to prevent moisture contamination. Avoid contact with skin and eyes.

### 4.2. MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

**Inhalation:** Nose, throat and respiratory tract irritation, nausea, headache, dizziness, drowsiness, shortness of breath, confusion

**Skin Contact :** Skin irritation, local redness, skin drying, skin cracking, allergic skin reactions

**Eye Contact:** Eye irritation, tearing, eye redness

**Ingestion:** Mouth, throat and digestive tract irritation, lung damage

### 4.3. INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

Maintain adequate ventilation and oxygenation of the patient. May cause respiratory sensitization or asthma-like symptoms. Bronchodilators, expectorants and antitussives may be of help. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. If you are sensitized to diisocyanates, consult your physician regarding working with other respiratory irritants or sensitizers. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

## Section 5. FIREFIGHTING MEASURES

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**General fire hazards.** This product and its vapours are easily ignited by heat, sparks or flames. Vapours may form explosive mixtures with air. Vapours are heavier than air and may travel a considerable distance to a source of ignition and flash back to a leak or open container. The product may ignite on contact with strong oxidizing agents. Do not cut, puncture or weld empty containers.

### 5.1. EXTINGUISHING MEDIA

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

**Extinguishing Media to Avoid:** Do not use direct water stream. May spread fire.

### 5.2. SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

**Hazardous Combustion Products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Isocyanates. Hydrogen cyanide. Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** Material reacts slowly with water, releasing carbon dioxide which can cause pressure buildup and rupture of closed containers. Elevated temperatures accelerate this reaction. Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Dense smoke is produced when product burns.

### 5.3. ADVICE FOR FIREFIGHTERS

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**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Water is not recommended, but may be applied in large quantities as a fine spray when other extinguishing agents are not available. Do not use direct water stream. May spread fire. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Move container from fire area if this is possible without hazard. Use water spray to cool fire-exposed containers and fire-affected zone until fire is out. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the “Accidental Release Measures” and the “Ecological Information” sections of this (M)SDS.

**Special Protective Equipment for Firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

## Section 6. ACCIDENTAL RELEASE MEASURES

### 6.1. PERSONAL PROTECTIVE MEASURES

Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep personnel out of low areas. Keep upwind of spill. Spilled material may cause a slipping hazard. Ventilate area of leak or spill. If available, use foam to smother or suppress. Refer to Section 7, Handling, for additional precautionary measures. See Section 10 for more specific information. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

### 6.2. METHODS OF CLEANING

Contain spilled material if possible. Absorb with materials such as: Dirt. Vermiculite. Sand. Clay. Do NOT use absorbent materials such as: Cement powder (Note: may generate heat). Collect in suitable and properly labeled open containers. Do not place in sealed containers. Suitable containers include: Metal drums. Plastic drums. Polylined fiber pacs. Wash the spill site with large quantities of water. Attempt to neutralize by adding suitable decontaminant solution: Formulation 1: sodium carbonate 5 - 10%; liquid detergent 0.2 - 2%; water to make up to 100%, OR Formulation 2: concentrated ammonia solution 3 - 8%; liquid detergent 0.2 - 2%; water to make up to 100%. If ammonia is used, use good ventilation to prevent vapor exposure. Contact Dow for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

### 6.3. REFERENCE TO OTHER SECTIONS

Observe for protection equipment in Sections 7 and 8. Observe about the product removal in Section 13.

## Section 7. HANDLING AND STORAGE

### 7.1. PRECAUTIONS FOR SAFE HANDLING

**Advice on safe handling.** Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid breathing mist, vapour or dust. Wash thoroughly after handling. Before handling, it is very important that ventilation controls are operating and protective equipment requirements are being followed. People working with this product would be properly trained regarding its hazards and its safe use. Eliminate all ignition sources (e.g. sparks, open flames, hot surfaces). Keep away from heat. Ground transfer containers to avoid static accumulation. Tightly reseal all partially used containers. Do not cut, puncture or weld containers. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

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**Measures to prevent fire.** Do not use for indoor heating of cooking unless ventilation is provided for exhausting fumes to outside.

**7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES**

**Requirements for storage.** Store in accordance with local regulations. Store in a dry place. Protect from atmospheric moisture. Do not store product contaminated with water to prevent potential hazardous reaction. See Section 10 for more specific information. No smoking near storage area. Store away from incompatible materials. Store the product according to occupational health and safety regulations and fire and building codes. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel.

**Storage Period:** 6 Months  
**Storage temperature:** 15 - 35 °C

**7.3. SPECIFIC END USE(S)**

No available.

**Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1. CONTROL PARAMETERS****8.1.1. Occupational exposure limits.**

COMPONENT	LIST	TYPE	VALUE
<b>Diphenylmethane-4,4'-di-isocyanate</b>	ACGIH	TWA	0.005 ppm
	UK WEL	TWA as NCO	0.02 mg/m3 SEN
	UK WEL	STEL as NCO	0.07 mg/m3 SEN

A “SEN” notation following the exposure guideline refers to the potential to produce sensitization, as confirmed by human or animal data.

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

**Recommended monitoring procedures.** Follow standard monitoring procedures.

**8.2. EXPOSURE CONTROLS**

**General information.** Do not eat, drink, smoke at the workplace. Wash hands before breaks and after work.

**8.2.1. Appropriate engineering controls.** Provide adequate ventilation and minimise the risk of inhalation of fumes. Use explosion-proof equipment. Provide easy access to water supply and eye wash facilities.

**8.2.2. Individual protection measures, such as personal protective equipment.**

**General information.** Use personal protective equipment as required. Keep working clothes separately. Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Eye/face protection.** Use chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent.

**Hand protection.** Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl

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rubber. Polyethylene. Chlorinated polyethylene. Ethyl vinyl alcohol laminate (“EVAL”). Examples of acceptable glove barrier materials include: Viton. Neoprene. Polyvinyl chloride (“PVC” or “vinyl”). Nitrile/butadiene rubber (“nitrile” or “NBR”). When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Ingestion:** Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

**Respiratory protection.** Atmospheric levels should be maintained below the exposure guideline. When atmospheric levels may exceed the exposure guideline, use an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure air-supplying respirator (air line or self-contained breathing apparatus). For emergency response or for situations where the atmospheric level is unknown, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2.

**Hygiene measures.** When using, do not eat, drink or smoke. Wash hands after handling. Launder contaminated clothing before reuse. Private clothes and working clothes should be kept separately. Handle in accordance with good industrial hygiene and safety practices. Observe any medical surveillance requirements.

**Engineering Controls**

**Ventilation:** Use only with adequate ventilation. Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. The odor and irritancy of this material are inadequate to warn of excessive exposure. Local exhaust ventilation may be necessary for some operations.

**8.3. Environmental exposure controls**

Dispose of rinse water in accordance with local and national regulations.

**Section 9. PHYSICAL AND CHEMICAL PROPERTIES****9.1. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES**

APPEARANCE: liquid  
COLOUR: dark brown  
ODOUR: characteristic

ODOUR THRESHOLD: 0.4 ppm *Based on Literature for MDI.* Odor is inadequate warning of excessive exposure.

pH: not applicable

MELTING POINT/FREEZING POINT: *Literature* forms crystals below 10°C

**INITIAL BOILING POINT AND BOILING**

RANGE: 406°F (208°C) at 5 mm Hg  
EVAPORATION RATE: no data available  
VAPOUR PRESSURE: <0,0001 (mm Hg at 220°C)



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VAPOUR DENSITY: (Air=1): 8.5 (MDI)  
SPECIFIC GRAVITY (H<sub>2</sub>O=1, at 25 °C): 1.2  
SOLUBILITY in water: insoluble, reacts, evolution of CO<sub>2</sub>

### 9.2. OTHER INFORMATION

No additional information.

## Section 10. STABILITY AND REACTIVITY

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### 10.1. REACTIVITY

Diisocyanates react with many materials and the rate of reaction increases with temperature as well as increased contact; these reactions can become violent. Contact is increased by stirring or if the other material mixes with the diisocyanate., Diisocyanates are not soluble in water and sink to the bottom, but react slowly at the interface. The reaction forms carbon dioxide gas and a layer of solid polyurea., Reaction with water will generate carbon dioxide and heat.

### 10.2. CHEMICAL STABILITY

Stable under recommended storage conditions. See Storage, Section 7.

### 10.3. POSSIBILITY OF HAZARDOUS REACTIONS

Can occur. Exposure to elevated temperatures can cause product to decompose and generate gas. This can cause pressure build-up and/or rupturing of closed containers. Polymerization can be catalyzed by: Strong bases. Water.

### 10.4. CONDITIONS TO AVOID

Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Pressure build-up can be rapid. Avoid moisture. Material reacts slowly with water, releasing carbon dioxide which can cause pressure buildup and rupture of closed containers. Elevated temperatures accelerate this reaction.

### 10.5. INCOMPATIBLE MATERIALS

Avoid contact with: Acids. Alcohols. Amines. Water. Ammonia. Bases. Metal compounds. Moist air. Strong oxidizers. Diisocyanates react with many materials and the rate of reaction increases with temperature as well as increased contact; these reactions can become violent. Contact is increased by stirring or if the other material mixes with the diisocyanate. Diisocyanates are not soluble in water and sink to the bottom, but react slowly at the interface. The reaction forms carbon dioxide gas and a layer of solid polyurea. Reaction with water will generate carbon dioxide and heat. Avoid contact with metals such as: Aluminum. Zinc. Brass. Tin. Copper. Galvanized metals. Avoid contact with absorbent materials such as: Moist organic absorbents. Avoid unintended contact with polyols. The reaction of polyols and isocyanates generate heat.

### 10.7. HAZARDOUS DECOMPOSITION PRODUCTS

Decomposition products depend upon temperature, air supply and the presence of other materials. Gases are released during decomposition.

## Section 11. TOXICOLOGICAL INFORMATION

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### 11.1. INFORMATION ON TOXICOLOGICAL EFFECTS

**Acute toxicity.** No data available

#### **Ingestion**

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

Typical for this family of materials. LD<sub>50</sub>, rat > 10,000 mg/kg

#### **Aspiration hazard**

Based on physical properties, not likely to be an aspiration hazard.

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**Dermal**

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Typical for this family of materials. LD50, rabbit > 9,400 mg/kg

**Inhalation**

At room temperature, vapors are minimal due to low volatility. However, certain operations may generate vapor or mist concentrations sufficient to cause respiratory irritation and other adverse effects. Such operations include those in which the material is heated, sprayed or otherwise mechanically dispersed such as drumming, venting or pumping. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. Decreased lung function has been associated with overexposure to isocyanates.

LC50, 4 h, Aerosol, rat 0.49 mg/l

For similar material(s): 2,4'-Diphenylmethane diisocyanate (CAS 5873-54-1). LC50, 4 h, Aerosol, rat 0.31 mg/l

For similar material(s): 4,4'-Methylenediphenyl diisocyanate (CAS 101-68-8). LC50, 1 h, Aerosol, rat 2.24 mg/l

**Eye damage/eye irritation**

May cause moderate eye irritation. May cause slight temporary corneal injury.

**Skin corrosion/irritation**

Prolonged contact may cause slight skin irritation with local redness. May stain skin.

**Sensitization****Skin**

Skin contact may cause an allergic skin reaction. Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

**Respiratory**

May cause allergic respiratory response. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

**Repeated Dose Toxicity**

Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols.

**Chronic Toxicity and Carcinogenicity**

Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m<sup>3</sup>) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

**Developmental Toxicity**

In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

**Reproductive Toxicity**

No relevant data found.

**Genetic Toxicology**

Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative.

**Section 12: ECOLOGICAL INFORMATION**

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**12.1. TOXICITY**

The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

**Fish Acute & Prolonged Toxicity**

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LC50, Danio rerio (zebra fish), static test, 96 h: &gt; 1,000 mg/l

**Aquatic Invertebrate Acute Toxicity**

EC50, Daphnia magna (Water flea), static test, 24 h: &gt; 1,000 mg/l

**Aquatic Plant Toxicity**

NOEC, Desmodium subspicatus (green algae), static test, Growth rate inhibition, 72 h: 1,640 mg/l

**Toxicity to Micro-organisms**

EC50; activated sludge, static test, 3 h: &gt; 100 mg/l

**Toxicity to Soil Dwelling Organisms**

EC50, Eisenia fetida (earthworms), 14 d: &gt; 1,000 mg/kg

**12.2. PERSISTENCE AND DEGRADABILITY**

In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

**OECD Biodegradation Tests:**

Biodegradation	Exposure Time	Method	10 Day Window
0 %	28 d	OECD 302C Test	Not applicable

**12.3. BIOACCUMULATIVE POTENTIAL**

**Bioaccumulation:** In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

**12.4. MOBILITY IN SOIL**

**Mobility in soil:** In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

**Environmental fate - Partition coefficient.** Not available.

**12.5. RESULTS OF PBT AND vPvB ASSESSMENT**

This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

**12.6. OTHER ADVERSE EFFECTS**

This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

**Section 13. DISPOSAL CONSIDERATION****13.1. WASTE TREATMENT METHODS**

This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 2008/98/EC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required. Do not dump into any sewers, on the ground, or into any body of water. Incineration under approved, controlled conditions using incinerators suitable or designed for the disposal of hazardous chemical wastes, is the preferred method for disposal. Small quantities of waste may be pretreated for example with polyol, to neutralise prior to disposal. Empty drums should be decontaminated (see Section 6) and either punctured and scrapped or given to an approved drum reconditioner.

**Section 14. TRANSPORT INFORMATION**

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Transport only in accordance with ADR for road haulage, RID for rail transportation, ADN/IMDG for carriage by vessel/sea and IATA for carriage by air.

**14.1. UN number.** Not applicable

**14.2. UN proper shipping name.** Proper Shipping Name: NOT REGULATED

**14.3. Transport hazard class(es).** Not applicable

**14.4. Packing group.** Not applicable

**14.5. Environmental hazards.** Not considered environmentally hazardous based on available data.

**14.6. Special precautions for user.** Not available.

**14.7. Transport in bulk according to MARPOL 73/78 and the IBC Code.** Not applicable.

**Special precautions for user.** Read safety instructions, SDS and emergency procedures before handling.

## Section 15. REGULATORY INFORMATION

### 15.1. SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE

– Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No.793/93, Commission Regulation (EC) No. 1488/94, Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (Official Journal of the European Union No. L 396, 30-12-2006, error correction – No. L 136/3, 2007-5-29);

– COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No. 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (OJ L 132, 29.5.2015, p. 8–31);

– On 16 December 2008 the Regulation (EC) No. 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of chemical substances and mixtures was undersigned. The said Regulation amended and repealed the directives 67/548/EEC and 1999/45/EC and Regulation (EC) No. 1907/2006 (the REACH Regulation). The Regulation has been published in the Official Journal of the European Union No. L353, volume 51 on 31 December, 2008;

– The European Agreement concerning International Carriage of Dangerous Goods by Road (ADR).

### 15.2. CHEMICAL SAFETY ASSESSMENT

This substance a chemical safety assessment has not been carried out.

## Section 16. OTHER INFORMATION

### 16.1. INDICATION OF CHANGES

Information contained in the Regulation 1907/2006/EC with the Regulation 830/2015.

**Indication of changes:** –.

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### 16.2. Full text of Hazard and Precautionary statements

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

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H319 Causes serious eye irritation.  
H332 Harmful if inhaled.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H335 May cause respiratory irritation.  
H351 Suspected of causing cancer.  
H373 May cause damage to organs through prolonged or repeated exposure.

Risk-phrases in the Composition section

R20 Harmful by inhalation.  
R36/37/38 Irritating to eyes, respiratory system and skin.  
R40 Limited evidence of a carcinogenic effect.  
R42/43 May cause sensitization by inhalation and skin contact.  
R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

Product Literature

Additional information on this product may be obtained by calling your sales or customer service contact.

**Supplemental Hazard information (EU):** none.**Abbreviations:** none.**Acronyms:**

ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road.  
ADN – European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.  
RID – Regulations concerning the International Carriage of Dangerous Goods by Rail.  
IMDG – International Maritime Dangerous Goods.  
IATA – International Air Transport Association.  
IMO – International Maritime Organization.  
vPvB – Very Persistent and Very Bioaccumulative.  
PBT – Persistent, Bioaccumulative and Toxic substance.  
LC50 – Lethal Concentration to 50 % of a test population.  
LD50 – Lethal Dose to 50% of a test population (Median Lethal Dose).  
CAS – Chemical Abstracts Service number.  
CEN – European Committee for Standardisation.  
STOT – Specific Target Organ Toxicity.  
PNEC(s) – Predicted No Effect Concentration(s).  
MSDS – Material Safety Data Sheet.

**KEY LITERATURE REFERENCES AND SOURCES FOR DATA:**

The data provided by the European Chemicals Bureau (ECB), European Chemicals Agency (ECHA), Swedish Chemicals Agency (KEMI), International Laboratories Organization (ILO), the TOXNET Internet pages.

**Disclaimer**

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