Safety data sheet

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

1.1. Product identifier

Code:	**C00144**
Product name	**POLITENACE TRASPARENTE (779,790)**

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

Intended use **adhesive based on polyurethane resins, mineral fillers and pigments.**

1.3. Details of the supplier of the safety data sheet

Name	**PIGAL s.p.a.**
Full address	**Via G. Rossa, 2**
District and Country	**40053 VALSAMOGGIA - Crespellano (BO)** **ITALIA**
	Tel. +39 051969068
	Fax +39 051969353
e-mail address of the competent person responsible for the Safety Data Sheet	**health.safety@pigal.it; pigalab@pigal.it**

1.4. Emergency telephone number

For urgent inquiries refer to	**+39 051969068 ore ufficio (8.30-13; 14-17.30) 118 (contattare il centro antiveleni più vicino)**

SECTION 2. Hazards identification.

2.1. Classification of the substance or mixture.

The product is classified as hazardous pursuant to the provisions set forth in Directives 67/548/EEC and 1999/45/EC (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of EC Regulation 1907/2006 and subsequent amendments. Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

2.1.1. Regulation 1272/2008 (CLP) and following amendments and adjustments.

Hazard classification and indication:

Carc. 2	H351
STOT RE 2	H373
Eye Irrit. 2	H319
Skin Irrit. 2	H315
STOT SE 3	H335
Resp. Sens. 1	H334
Skin Sens. 1	H317

2.1.2. 67/548/EEC and 1999/45/EC Directives and following amendments and adjustments.

Danger Symbols:
Xn
R phrases:
20-36/37/38-40-42/43-48/20

The full wording of the Risk (R) and hazard (H) phrases is given in section 16 of the sheet.

2.2. Label elements.

Hazard pictograms:

Signal words: Danger

Hazard statements:

H351	Suspected of causing cancer.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
EUH204	Contains isocyanates. May produce an allergic reaction.
EUH208	Contains: DIPHENYLMETHANE-2,2'-DIISOCYANATE May produce an allergic reaction.

Precautionary statements:

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P201	Obtain special instructions before use.
P280	Wear protective gloves / protective clothing / eye protection / face protection.
P284	Wear respiratory protection.
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.

Contains: DIPHENYLMETHANE-4,4'-DIISOCYANATE
DIPHENYLMETHANE-2,4'-DIISOCYANATE
DIPHENYLMETHANE-2,2'-DIISOCYANATE

2.3. Other hazards.

Use of this product may cause allergic reactions in individuals already sensitized to diisocyanates. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product. This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (ie type A1 according to standard EN 14387).

SECTION 3. Composition/information on ingredients.

3.1. Substances.

Information not relevant.

3.2. Mixtures.

Contains:

Identification.	Conc. %.	Classification 67/548/EEC.	Classification 1272/2008 (CLP).
DIPHENYLMETHANE-4,4'-DIISOCYANATE			
CAS. 101-68-8 EC. 202-966-0 INDEX. 615-005-00-9 Reg. no. 01-2119457014-47	12 - 13,5	Carc. Cat. 3 R40, Xn R20, Xn R42/43, Xn R48/20, Xi R36/37/38, Note 2 C	Carc. 2 H351, Acute Tox. 4 H332, STOT RE 2 H373, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335, Resp. Sens. 1 H334, Skin Sens. 1 H317, Note 2 C
DIPHENYLMETHANE-2,4'-DIISOCYANATE			
CAS. 5873-54-1 EC. 227-534-9 INDEX. 615-005-00-9 Reg. no. 01-2119480143-45	12 - 13,5	Carc. Cat. 3 R40, Xn R20, Xn R42/43, Xn R48/20, Xi R36/37/38, Note 2 C	Carc. 2 H351, Acute Tox. 4 H332, STOT RE 2 H373, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335, Resp. Sens. 1 H334, Skin Sens. 1 H317, Note 2 C
2,2'-DIMORPHOLINYLDIETHYL ETHER			
CAS. 6425-39-4 EC. 229-194-7 INDEX. - Reg. no. 01-2119969278-20	1,5 - 2	Xi R36/38	Eye Irrit. 2A H319
DIPHENYLMETHANE-2,2'-DIISOCYANATE			
CAS. 2536-05-2 EC. 219-799-4 INDEX. 615-005-00-9 Reg. no. 01-2119927323-43	0,2 - 0,25	Carc. Cat. 3 R40, Xn R20, Xn R42/43, Xn R48/20, Xi R36/37/38, Note 2 C	Carc. 2 H351, Acute Tox. 4 H332, STOT RE 2 H373, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335, Resp. Sens. 1 H334, Skin Sens. 1 H317, Note 2 C

Note: Upper limit is not included into the range.

The full wording of the Risk (R) and hazard (H) phrases is given in section 16 of the sheet.
T+ = Very Toxic(T+), T = Toxic(T), Xn = Harmful(Xn), C = Corrosive(C), Xi = Irritant(Xi), O = Oxidizing(O), E = Explosive(E), F+ = Extremely Flammable(F+), F = Highly Flammable(F), N = Dangerous for the Environment(N)

SECTION 4. First aid measures.

4.1. Description of first aid measures.

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.
SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention immediately. Wash contaminated clothing before using it again.
INHALATION: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately.
INGESTION: Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorised by a doctor.

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

For symptoms and effects caused by the contained substances, see chap. 11.

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

Information not available.

SECTION 5. Firefighting measures.

5.1. Extinguishing media.

SUITABLE EXTINGUISHING EQUIPMENT
The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.
UNSUITABLE EXTINGUISHING EQUIPMENT
None in particular.

5.2. Special hazards arising from the substance or mixture.

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE
Do not breathe combustion products.

5.3. Advice for firefighters.

GENERAL INFORMATION
Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.
SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS
Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

SECTION 6. Accidental release measures.

6.1. Personal precautions, protective equipment and emergency procedures.

Block the leakage if there is no hazard.
Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

6.2. Environmental precautions.

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3. Methods and material for containment and cleaning up.

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.
Make sure the leakage site is well aired. Check incompatibility for container material in section 7. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections.

Any information on personal protection and disposal is given in sections 8 and 13.

SECTION 7. Handling and storage.

7.1. Precautions for safe handling.

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

7.2. Conditions for safe storage, including any incompatibilities.

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

7.3. Specific end use(s).

Information not available.

SECTION 8. Exposure controls/personal protection.

8.1. Control parameters.

Regulatory References:

United Kingdom	EH40/2005 Workplace exposure limits. Containing the list of workplace exposure limits for use with the Control of Substances Hazardous to Health Regulations (as amended).
Éire	Code of Practice Chemical Agent Regulations 2011.
OEL EU	Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC.
TLV-ACGIH	ACGIH 2012

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min	
		mg/m3	ppm	mg/m3	ppm
OEL	IRL	0,02		0,07	
TLV-ACGIH		0,051	0,005		

Predicted no-effect concentration - PNEC.		
Normal value for the terrestrial compartment	1,01	mg/kg
Normal value in fresh water	1,01	mg/l
Normal value in marine water	0,11	mg/l
Normal value of STP microorganisms	1,01	mg/l

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers. Acute local	Acute systemic	Chronic local	Chronic systemic	Effects on workers Acute local	Acute systemic	Chronic local	Chronic systemic
Oral.					0,1 mg/m3	0,1 mg/m3		
Inhalation.							0,05 mg/m3	0,05 mg/m3
Skin.					VND	50 mg/kg/d		

DIPHENYLMETHANE-2,4'-DIISOCYANATE

Predicted no-effect concentration - PNEC.		
Normal value for the terrestrial compartment	1,01	mg/kg
Normal value in fresh water	1,01	mg/l

Normal value in marine water	0,11	mg/l
Normal value of STP microorganisms	1,01	mg/l

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers. Acute local	Acute systemic	Chronic local	Chronic systemic	Effects on workers Acute local	Acute systemic	Chronic local	Chronic systemic
Oral.					0,1 mg/m3	0,1 mg/m3		
Inhalation.							0,05 mg/m3	0,05 mg/m3
Skin.					VND	50 mg/kg/d		

2,2'-DIMORPHOLINYLDIETHYL ETHER

Predicted no-effect concentration - PNEC.

Normal value for the terrestrial compartment	1,58	mg/kg
Normal value in fresh water	0,1	mg/l
Normal value for water, intermittent release	1	mg/l
Normal value in marine water	0,01	mg/l
Normal value for fresh water sediment	8,2	mg/kg
Normal value for marine water sediment	0,82	mg/kg
Normal value of STP microorganisms	100	mg/l

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers. Acute local	Acute systemic	Chronic local	Chronic systemic	Effects on workers Acute local	Acute systemic	Chronic local	Chronic systemic
Oral.			VND	0,5 mg/kg/d				
Inhalation.			VND	1,8 mg/m3			VND	7,28 mg/m3
Skin.			VND	0,5 mg/kg/d			VND	1 mg/kg/d

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified.

TLV of solvent mixture: 0,05 mg/m3.

8.2. Exposure controls.

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.
When choosing personal protective equipment, ask your chemical substance supplier for advice.
Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

Exposure levels must be kept as low as possible to avoid significant build-up in the organism. Manage personal protective equipment so as to guarantee maximum protection (e.g. reduction in replacement times).

HAND PROTECTION
Protect hands with category III work gloves (see standard EN 374).
The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.
The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

SKIN PROTECTION
Wear category II professional long-sleeved overalls and safety footwear (see Directive 89/686/EEC and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

EYE PROTECTION
Wear airtight protective goggles (see standard EN 166).

RESPIRATORY PROTECTION
If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with a type B filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.
Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.
If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

SECTION 9. Physical and chemical properties.

9.1. Information on basic physical and chemical properties.

Appearance	pasty liquid
Colour	opalescent
Odour	mild
Odour threshold.	Not available.
pH.	Not available.
Melting point / freezing point.	Not available.
Initial boiling point.	Not available.
Boiling range.	Not available.
Flash point.	> 60 °C.
Evaporation Rate	Not available.
Flammability of solids and gases	Not available.
Lower inflammability limit.	Not available.
Upper inflammability limit.	Not available.
Lower explosive limit.	Not available.
Upper explosive limit.	Not available.
Vapour pressure.	Not available.
Vapour density	Not available.
Relative density.	1,130 Kg/l
Solubility	soluble in organic solvents
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature.	> 250 °C.
Decomposition temperature.	Not available.
Viscosity	20000-35000 cps (23°C/cone & plate)
Explosive properties	Not available.
Oxidising properties	Not available.

9.2. Other information.

VOC (Directive 1999/13/EC) :	1,82 % - 20,57 g/litre.
VOC (volatile carbon) :	0
Can pressure:	N.A.

SECTION 10. Stability and reactivity.

10.1. Reactivity.

There are no particular risks of reaction with other substances in normal conditions of use.

DIPHENYLMETHANE-4,4'-DIISOCYANATE: decomposes at 274°C. With water it develops carbon dioxide and forms an insoluble solid polymer. Consequently any wet material recovered must be stored in open containers.

10.2. Chemical stability.

The product is stable in normal conditions of use and storage.

10.3. Possibility of hazardous reactions.

No hazardous reactions are foreseeable in normal conditions of use and storage.

DIPHENYLMETHANE-4,4'-DIISOCYANATE: can react dangerously with: alcohols, amines, ammonia, sodium hydroxide, acids, water and strong bases and acids.

10.4. Conditions to avoid.

None in particular. However the usual precautions used for chemical products should be respected.

10.5. Incompatible materials.

Information not available.

10.6. Hazardous decomposition products.

DIPHENYLMETHANE-4,4'-DIISOCYANATE: nitric oxides, carbon oxides, hydrogen cyanide.

SECTION 11. Toxicological information.

11.1. Information on toxicological effects.

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.
This product must be handled carefully because of its possible carcinogenic effects. Anyway, currently available data do not allow us to comprehensively assess this product.
This product may cause functional disorders or morphological mutations after repeated or prolonged exposure and/or may accumulate inside the human body and is thus graded as dangerous.
Acute effects: stinging eyes. Symptoms may include: rubescence, edema, pain and lachrymation.
Vapour inhalation may moderately irritate the upper respiratory trait. Contact with skin may cause slight irritation.
Ingestion may cause health problems, including stomach pain and sting, nausea and sickness.
Acute effects: contact with skin may cause: irritation, erythema, edema, dryness and chapped skin. Vapour inhalation may slightly irritate the upper respiratory trait. Ingestion may cause health disorders, including stomach pain and sting, nausea and sickness.
Acute effects: vapour inhalation may irritate the lower and upper respiratory tract and cause cough and respiratory disorders. At higher concentrations it can also cause pulmonary edema. Ingestion may cause health problems, including stomach pain and sting, nausea and sickness.
Inhalation of this product causes sensitization, which may then give rise to a series of inflammatory episodes, most of all characterized by obstruction and affecting the respiratory system. Sometimes, sensitization phenomena arise together with evident rhinitis and asthma. Damages to the respiratory system depend on the inhaled quantity, on the product concentration in the working environment and on the exposure time.
Upon contact with skin, this product causes sensitization (dermatitis). Dermatitis derives from skin irritation on the areas which repeatedly come into contact with the sensitizing agent. Cutaneous lesions may include: erythemas, edemas, papules, vesicles, pustules, scurvies, ulcerations and exudative phenomena, whose intensity varies according to illness seriousness and affected areas. Erythemas, edemas and exudative phenomena prevail during the acute phase. Scurfy skin, dryness, ulcerations and skin thickening prevail during the chronic phase.

DIPHENYLMETHANE-4,4'-DIISOCYANATE: risk of sensitization even at concentrations lower than TLV in case of spray working.

DIPHENYLMETHANE-4,4'-DIISOCYANATE
LD50 (Oral). > 2000 mg/kg Rattus sp.
LD50 (Dermal). > 9400 mg/kg Oryctolagus sp.
LC50 (Inhalation). 2,24 mg/l Rattus sp.

DIPHENYLMETHANE-2,4'-DIISOCYANATE
LD50 (Oral). > 2000 mg/kg Rattus sp.
LD50 (Dermal). > 9400 mg/kg Oryctolagus sp.
LC50 (Inhalation). 1,5 mg/l Rattus sp.

DIPHENYLMETHANE-2,2'-DIISOCYANATE
LD50 (Oral). > 2000 mg/kg Rattus sp.
LD50 (Dermal). > 9400 mg/kg Oryctolagus sp.
LC50 (Inhalation). 1,5 mg/l Rattus sp.

2,2'-DIMORPHOLINYLDIETHYL ETHER
LD50 (Oral). 2025 mg/kg Rattus sp
LD50 (Dermal). 3038 mg/kg Oryctolagus sp.

SECTION 12. Ecological information.

12.1. Toxicity.

DIPHENYLMETHANE-4,4'-DIISOCYANATE
LC50 - for Fish.
> 1000 mg/l/96h Danio rerio
Chronic NOEC for Algae / Aquatic Plants.
1640 mg/l Desmodesmus subspicatus

DIPHENYLMETHANE-2,4'-DIISOCYANATE
LC50 - for Fish.
> 1000 mg/l/96h Danio rerio
EC50 - for Algae / Aquatic Plants.
> 1640 mg/l/72h Scenedesmus subspicatus
Chronic NOEC for Crustacea.
> 10 mg/l Daphnia magna

DIPHENYLMETHANE-2,2'-DIISOCYANATE
LC50 - for Fish.
> 1000 mg/l/96h Danio rerio
EC50 - for Algae / Aquatic Plants.
> 1640 mg/l/72h Scenedesmus subspicatus
Chronic NOEC for Crustacea.
> 10 mg/l Daphnia magna

2,2'-DIMORPHOLINYLDIETHYL ETHER
LC50 - for Fish.
> 2150 mg/l/96h
EC50 - for Crustacea.
> 100 mg/l/48h Daphnia sp.
EC50 - for Algae / Aquatic Plants.
> 100 mg/l/72h
Chronic NOEC for Algae / Aquatic Plants.
100 mg/l

12.2. Persistence and degradability.

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Solubility in water.
mg/l 0,1 - 100
NOT rapidly biodegradable.

2,2'-DIMORPHOLINYLDIETHYL ETHER
NOT rapidly biodegradable.

12.3. Bioaccumulative potential.

DIPHENYLMETHANE-4,4'-DIISOCYANATE
Partition coefficient: n-octanol/water.
4,51

DIPHENYLMETHANE-2,4'-DIISOCYANATE
BCF.
200 Cyprinus carpio

DIPHENYLMETHANE-2,2'-DIISOCYANATE
BCF.
200 Cyprinus carpio

12.4. Mobility in soil.

Information not available.

12.5. Results of PBT and vPvB assessment.

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

12.6. Other adverse effects.

Information not available.

SECTION 13. Disposal considerations.

The valid EEC waste code are largely source-related; the manufacturer is, therefore, unable to specify waste codes for products used in various sectors.
Small quantities of hardened product can be treated come Urban Solid Waste or industrial waste similar to USW.
CER-code (suggested) : 08 04 09.

13.1. Waste treatment methods.

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.
Avoid littering. Do not contaminate soil, sewers and waterways.
CONTAMINATED PACKAGING
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

SECTION 14. Transport information.

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

SECTION 15. Regulatory information.

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

Seveso category. None.

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006.

Contained substance.

Point.	56	DIPHENYLMETHANE-2,4'-DIISOCYANATE Reg. no.: 01-2119480143-45
Point.	56	DIPHENYLMETHANE -4,4'-DIISOCYANATE Nr. Reg.: 01-2119457014-47
Point.	56	DIPHENYLMETHANE -2,2'-DIISOCYANATE Nr. Reg.: 01-2119927323-43

Substances in Candidate List (Art. 59 REACH).

None.

Substances subject to authorisarion (Annex XIV REACH).

None.

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None.

Substances subject to the Rotterdam Convention:

None.

Substances subject to the Stockholm Convention:

None.

Healthcare controls.

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

Product not intended for uses provided for by Dir. 2004/42/CE.

Classification for water pollution in Germany (VwVwS 2005).
WGK 1: Slightly hazardous to water

15.2. Chemical safety assessment.

No chemical safety assessment has been processed for the mixture and the substances it contains.

SECTION 16. Other information.

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Carc. 2	Carcinogenicity, category 2
Acute Tox. 4	Acute toxicity, category 4
STOT RE 2	Specific target organ toxicity - repeated exposure, category 2
Eye Irrit. 2	Eye irritation, category 2
Eye Irrit. 2A	Eye irritation, category 2A
Skin Irrit. 2	Skin irritation, category 2
STOT SE 3	Specific target organ toxicity - single exposure, category 3
Resp. Sens. 1	Respiratory sensitization, category 1
Skin Sens. 1	Skin sensitization, category 1
H351	Suspected of causing cancer.
H332	Harmful if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
EUH204	Contains isocyanates. May produce an allergic reaction.

Text of risk (R) phrases mentioned in section 2-3 of the sheet:

R20	HARMFUL BY INHALATION.
R36/37/38	IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
R36/38	IRRITATING TO EYES AND SKIN.
Carc. Cat. 3	Carcinogenicity, category 3.
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.

LEGEND:
- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%

- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY

1. Directive 1999/45/EC and following amendments
2. Directive 67/548/EEC and following amendments and adjustments
3. Regulation (EC) 1907/2006 (REACH) of the European Parliament
4. Regulation (EC) 1272/2008 (CLP) of the European Parliament
5. Regulation (EC) 790/2009 (I Atp. CLP) of the European Parliament
6. Regulation (EC) 453/2010 of the European Parliament
7. Regulation (EC) 286/2011 (II Atp. CLP) of the European Parliament
8. Regulation (EC) 618/2012 (III Atp. CLP) of the European Parliament
9. The Merck Index. - 10th Edition
10. Handling Chemical Safety
11. Niosh - Registry of Toxic Effects of Chemical Substances
12. INRS - Fiche Toxicologique (toxicological sheet)
13. Patty - Industrial Hygiene and Toxicology
14. N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
15. ECHA website

Note for users:
The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.
This document must not be regarded as a guarantee on any specific product property.
The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.
Provide appointed staff with adequate training on how to use chemical products.

Changes to previous review:
The following sections were modified:
01 / 02 / 03 / 04 / 06 / 07 / 08 / 09 / 10 / 11 / 12 / 15 / 16.