Safety Data Sheet

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

1.1. Product identifier

Code:	**F00023**
Product name	**PRIMER 435.2**

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

Intended use	**Polyurethane resin in solvents; adhesion promoter.**

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	**40056 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)**

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/or EC Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of EC Regulationn 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.

Danger Symbols: F-Xn

R phrases: 11-20/21-36-42/43-66

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

2.2. Label elements.

Hazard labelling pursuant to Directives 67/548/EEC and 1999/45/EC and subsequent amendments and supplements.

Xn

HARMFUL

F

HIGHLY FLAMMABLE

R11	HIGHLY FLAMMABLE.
R20/21	HARMFUL BY INHALATION AND IN CONTACT WITH SKIN.
R36	IRRITATING TO EYES.
R42/43	MAY CAUSE SENSITIZATION BY INHALATION AND SKIN CONTACT.
R66	REPEATED EXPOSURE MAY CAUSE SKIN DRYNESS OR CRACKING.
S 9	KEEP CONTAINER IN A WELL-VENTILATED PLACE.
S16	KEEP AWAY FROM SOURCES OF IGNITION - NO SMOKING.
S23	DO NOT BREATHE GAS/FUMES/VAPOUR/SPRAY (APPROPRIATE WORDING TO BE SPECIFIED BY THE MANUFACTURER).
S36/37	WEAR SUITABLE PROTECTIVE CLOTHING AND GLOVES.

S45 IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).
S63 IN CASE OF ACCIDENT BY INHALATION: REMOVE CASUALTY TO FRESH AIR AND KEEP AT REST.

Contains isocyanates. See information supplied by the manufacturer.

Contains: Aromatic polyisocyanate
2,4-/2,6-toluen-diisocianato

2.3. Other hazards.

Do not use in applications "do it yourself".

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).
Aromatic polyisocyanate			
CAS. 53317-61-6	40 - 42,5	Xi R36, Xi R43	Eye Irrit. 2 H319, Skin Sens. 1 H317
EC. -			
INDEX. -			
METHYL ETHYL KETONE			
CAS. 78-93-3	30 - 32,5	R66, R67, F R11, Xi R36	Flam. Liq. 2 H225, Eye Irrit. 2 H319, STOT SE 3 H336, EUH066
EC. 201-159-0			
INDEX. 606-002-00-3			
Reg. no. 01-2119457290-43			
1-METHOXY-2-PROPANOL ACETATE			
CAS. 108-65-6	12 - 13,5	R10	Flam. Liq. 3 H226
EC. 203-603-9			
INDEX. 607-195-00-7			
XYLENE (MIXTURE OF ISOMERS)			
CAS. 1330-20-7	10,5 - 12	R10, Xn R20/21, Xi R38, Note C	Flam. Liq. 3 H226, Acute Tox. 4 H332, Acute Tox. 4 H312, Skin Irrit. 2 H315, Note C
EC. 215-535-7			
INDEX. 601-022-00-9			
Reg. no. 01-2119486136-34-xxxx			
ETHYLBENZENE			
CAS. 100-41-4	2,5 - 3	F R11, Xn R20	Flam. Liq. 2 H225, Acute Tox. 4 H332
EC. 202-849-4			
INDEX. 601-023-00-4			
2,4-/2,6-toluen-diisocianato			
CAS. 26471-62-5	0,3 - 0,35	Carc. Cat. 3 R40, R52/53, T+ R26, Xn R42/43, Xi R36/37/38	Carc. 2 H351, Acute Tox. 1 H330, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335, Resp. Sens. 1 H334, Skin Sens. 1 H317, Aquatic Chronic 3 H412
EC. 247-722-4			
INDEX. 615-006-00-4			
Reg. no. 01-2119454791-34-xxxx			

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)

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

4. First aid measures.

4.1. Description of first aid measures.

EYES: Irrigate copiously with clean, fresh water for at least 15 minutes.
Seek medical advice.
SKIN: Immediately wash with plenty of water. Remove all contaminated clothing. Obtain immediate medical attention. Wash contaminated clothing separately before using them again.
INHALATION: Remove to open air. If breathing is irregular or stopped, administer artificial respiration. Obtain immediate medical attention.
INGESTION: Obtain immediate medical attention. Induce vomiting only if indicated by the doctor. Give nothing by mouth to an unconscious person.

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.
Follow doctor's orders.

5. Firefighting measures.

5.1. Extinguishing media.
SUITABLE EXTINGUISHING MEDIA
The extinction equipment should contain carbon dioxide, foam or chemical powders. For product leaks and spills that have not caught fire, nebulised water can be used to dispel flammable fumes and protect the individuals taking part in stemming the leak.
EXTINGUISHING MEDIA WHICH SHALL NOT BE USED FOR SAFETY REASONS
Do not use jets of water. Water is not effective for putting out fires but can be used to cool containers exposed to flames to prevent explosions.

5.2. Special hazards arising from the substance or mixture.
HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE
Excess pressure may form in containers exposed to fire at a risk of explosion.
Do not breathe combustion products (carbon oxide, toxic pyrolysis products, etc).

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 and the remains of the fire according to applicable regulations.
SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS
Hardhat with visor, fireproof clothing (fireproof jacket and trousers with ties around arms, legs and waist) work gloves (fireproof, cut proof and dielectric), self-respirator (self-protector).

6. Accidental release measures.

6.1. Personal precautions, protective equipment and emergency procedures.
Eliminate sources of ignition (cigarettes, flames, sparks, etc.) from the air in which the leak occurred. If there are no contraindications, spray solid products with water to prevent the formation of dust. Use breathing equipment if fumes or powders are released into the air. Block the leakage if there is no hazard. Do not handle damaged containers or leaked product before donning appropriate protective gear. Send away individuals who are not suitably equipped. For information on risks for the environmental and health, respiratory tract protection, ventilation and personal protection equipment, refer to the other sections of this sheet. These indications apply for both processing staff and those involved in emergency procedures.

6.2. Environmental precautions.
The product must not penetrate the sewers, surface water, ground water and neighbouring areas.

6.3. Methods and material for containment and cleaning up.
For liquid products, suck into a suitable container (made of material not incompatible with the product) and soak up any leaked product with absorbent inert material (sand, vermiculite, diatomeous earth, Kieselguhr, etc). Collect the majority of the remaining material and deposit in containers for disposal. For solid products, use spark proof mechanical tools to collect the leaked product and place in plastic containers. If there are no contraindications, use jets of water to eliminate product residues. Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

In specific reference to ISOCYANATES - Remove mechanically; cover residues with damp absorbent material (eg. Sawdust,
calcium silicate hydrate based chemical binder, sand). After approx. 1 hours, collect in a waste container. Do not seal (release of carbon dioxide). Keep damp and leave for several days outdoors, under controlled conditions.

6.4. Reference to other sections.
Any information on personal protection and disposal is given in sections 8 and 13.

7. Handling and storage.

7.1. Precautions for safe handling.
Avoid the accumulation of electrostatic charges.
Vapours may ignite with explosion, it is therefore necessary to avoid accumulation keeping the windows and doors open, ensuring crossventilation. Without adequate ventilation, the vapours may accumulate at the bottom and ignite at a distance, if triggered off, with the risk of flashback. Keep far away from sources of heat, sparks and bright flames. Do not smoke, use matches or lighters. Keep the containers earthed while decanting and wear antistatic boots.
Vigorous stirring and flow through the pipings and equipment may cause the formation and accumulation of electrostatic charges due to the low conductivity of the product. In order to avoid the risk of fire outbreak and explosion never use compressed air during movement.

7.2. Conditions for safe storage, including any incompatibilities.
Store the containers sealed and in a well ventilated place.

7.3. Specific end use(s).
Information not available.

8. Exposure controls/personal protection.

8.1. Control parameters.

Name	Type	Country	TWA/8h		STEL/15min		
			mg/m3	ppm	mg/m3	ppm	
METHYL ETHYL KETONE	TLV-ACGIH			200		300	
	OEL	EU	600	200	900	300	
	OEL	IRL		200		300	
	WEL	UK		200		300	
1-METHOXY-2-PROPANOL ACETATE							
	OEL	EU	275	50	550	100	Skin
	OEL	IRL		50		100	Skin
	WEL	UK		50		100	Skin
XYLENE (MIXTURE OF ISOMERS)	TLV-ACGIH			100		150	Skin
	OEL	EU	221	50	442	100	Skin
	OEL	IRL		50		100	Skin
	WEL	UK		50		100	Skin
ETHYLBENZENE	TLV-ACGIH			100		125	Skin
	OEL	EU	442	100	884	200	Skin
	OEL	IRL		100		125	Skin
	WEL	UK		100		125	Skin
2,4-/2,6-toluen-diisocianato	OEL			0,005		0,02	

Mixture of isomers of xylene
Derived no-effect level (DNEL) or derived minimal effect level (DMELs):
Workers (short-term):
Inhalation DNEL - systemic effects / rooms: 289 mg / m³
Dermal DNEL - local effects: 174 mg / m³
Workers (long-term):
Inhalation DNEL - systemic effects / rooms: 77 mg / m³
The general population (short-term):
DNEL Inalativo - systemic effects / rooms: 174 mg / m³
General population (long-term):
DNEL Inalativo - systemic effects: 14.8 mg / m³
DNEL Oral - Systemic effects: 1.6 mg / kg bw / day
Dermal DNEL - systemic effects: 108 mg / kg bw / day

Predicted No Effect Concentration (PNEC)
Fresh water: 0.327 mg / l
Freshwater sediment: 12.46 mg / kg dry weight
Soil: 2.31 mg / kg dry weight
Sewage Treatment Plant: 6.58 mg / l.
.
2-BUTANONE (MEK) - Long-term systemic effects
DNEL (EC)
Dermal Workers = 1161 mg / kg
Inhalation Workers = 600 mg/m3
Dermal Population = 412 mg / kg
Inhalation Population = 106 mg/m3
Oral Population = 31 mg / kg.
PNEC (EC)
Sediment (freshwater) = 284.74 mg / kg
Sediment (sea water) = 284.7 mg / kg
Soil = 22.5 mg / kg
Oral = 1000 mg / kg
Fresh water = 55.8 mg / l

Released:
Emission occasional = 55.8 mg / l
Sewage Treatment Plant = 709 mg / l
.
2,4 - / 2,6-toluene-diisocyanate
Derived no-effect level (DNEL) or derived minimal effect level (DMELs):
Workers (short-term):
Dermal DNEL - systemic effects / local: Unable to perform a quantitative risk assessment. Most sensitive endpoint: Irritation (skin);
Inhalation DNEL - systemic effects / local: 0.14 mg / m³ air
Most sensitive endpoint: Irritation (respiratory tract)
Workers (long-term):
Dermal DNEL - systemic effects: Unable to perform a quantitative risk assessment. Most sensitive endpoint: Irritation (skin);
Inhalation DNEL - systemic effects: 0.035 mg / m³ air
Most sensitive endpoint: Irritation (respiratory tract)

Predicted No Effect Concentration (PNEC)
Fresh water: 0.013 mg / l
Sea water: 0.00125 mg / l
sediment: irrelevant
Soil:> 1 mg / kg dry weight
Wastewater treatment plant:> 1 mg / l
Oral: Not applicable.

8.2. Exposure controls.

As the use of adequate technical equipment must always take priority over personal protection equipment, make sure that the workplace is well aired through effective local aspiration or bad air vent. If such operations do not make it possible to keep the concentration of the product below the permitted workplace exposure thresholds a suitable respiratory tract protection must be used. See product label for hazard details during use. Personal protection equipment must comply with the rules in force indicated below.
HAND PROTECTION
Protect hands with category III (ref. Directive 89/686/EEC and standard EN 374) work gloves, such as those in PVA, butyl, fluoroelastomer or equivalent. The following should be considered when choosing work glove material: degradation, breakage times and permeation. Work glove resistance to preparations should be checked before use, as it can be unpredictable. Gloves' limit depends on the duration of exposure.
EYE PROTECTION
Wear protective airtight goggles (ref. standard EN 166).
SKIN PROTECTION
Wear category II professional long-sleeved overalls and safety footwear (ref. Directive 89/686/CEE and standard EN 344). Wash body with soap and water after removing overalls.
RESPIRATORY PROTECTION
If the threshold value (if available) for one or more of the substances present in the preparation for daily exposure in the workplace or to a fraction established by the company's prevention and protection service is exceeded, wear a mask with an AX or universal filter, the class (1, 2 or 3) of which must be chosen according to the limit concentration of use (ref. standard EN 141).
The use of respiratory tract protection equipment, such as masks like that indicated above, is necessary to reduce worker exposure in the absence of technical measures. The protection provided by masks is in any case limited.
If the substance in question is odourless or its olfactory threshold is higher than the relative exposure limit and in the event of an emergency, or when exposure levels are unknown or the concentration of oxygen in the workplace is less than 17% volume, wear self-contained, open-circuit compressed air breathing apparatus (ref. standard EN 137) or fresh air hose breathing apparatus for use with full face mask, half mask or mouthpiece (ref. standard EN 138).
An emergency eye washing and shower system must be provided.

In case of hypersensitivity (asthma, chronic bronchitis, chronic dermatosis) is not recommended handling the product. Even several hours after overexposure may manifest symptoms of respiratory disorders.

9. Physical and chemical properties.

9.1. Information on basic physical and chemical properties.

Appearance			liquid
Colour			straw-coloured
Odour			typical of solvent
Odour threshold.			Not available.
pH.			Not available.
Melting or freezing point.			Not available.
Initial boiling point.			Not available.
Boiling range.			Not available.
Flash point.	<	21	°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.	1 % (V/V).
Upper explosive limit.	8 % (V/V).
Vapour pressure.	110 kPa - 50°C
Vapour density	> 1 (aria = 1)
Specific gravity.	0,97 Kg/l
Solubility	slightly soluble
Partition coefficient: n-octanol/water	Not available.
Ignition temperature.	250 °C.
Decomposition temperature.	Not available.
Viscosity	Not available.
Reactive Properties	Not available.

9.2. Other information.

VOC (Directive 1999/13/EC) :	58,08 %	-	563,37	g/litre.
VOC (volatile carbon) :	40,23 %	-	390,21	g/litre.

Can pressure: N.A.

10. Stability and reactivity.

10.1. Reactivity.

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

1-METHOXY-2-PROPANOL ACETATE: stable but with the air it may slowly develop peroxides that explode with an increase in temperature.
BUTANONE: reacts with light metals like aluminium, and with strong oxidising agents; attacks various types of plastic. Decomposes under the effect of heat.

10.2. Chemical stability.

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

10.3. Possibility of hazardous reactions.

The vapours may also form explosive mixtures with the air.

XYLENE (MIXTURE OF ISOMERS): stable, but may develop violent reactions in the presence of strong oxidising agents such as sulphuric and nitric acids and perchlorates. May form explosive mixtures with the air.
1-METHOXY-2-PROPANOL ACETATE: may react violently with oxidising agents and strong acids and alkaline metals.
ETHYLBENZENE: reacts violently with strong oxidising agents and attacks various types of plastics. Can form explosive mixtures with the air.
BUTANONE: may generate peroxides on contact with air, light or oxidising agents. Risk of explosion on contact with: hydrogen peroxide and sulphuric acid. It may react dangerously with: oxidising agents, trichloromethane, alkalis. Forms explosive mixtures with the air.

10.4. Conditions to avoid.

Avoid overheating, electrostatic discharge and all sources of ignition.

1-METHOXY-2-PROPANOL ACETATE: store in an inert atmosphere, sheletered from moisture because it hydrolises easily.
BUTANONE: avoid exposure to sources of heat.

10.5. Incompatible materials.

1-METHOXY-2-PROPANOL ACETATE: oxidising agents, strong acids and alkaline metals.
BUTANONE: strong oxidising agents, inorganic acids, ammonia, copper and chloroform.

10.6. Hazardous decomposition products.

In the event of thermal decomposition or fire, vapours potentially dangerous to health may be released.

ETHYLBENZENE: methane, styrene, hydrogen, ethane.

11. Toxicological information.

11.1. Information on toxicological effects.

Acute effects: inhalation and cutaneous absorption of this product are harmful. This product may irritate mucosas, the upper respiratory tract, and eyes. Exposure symptoms may include: stinging and irritated eyes, mouth, nose, throat; cough, respiratory disorders, dizziness, headache, nausea and sickness.
In the most serious cases, inhalation of this product may cause larynx and bronchial tube edema and irritation, chemical pneumonia and pulmonary edema. Upon contact with skin, this product may irritate it, causing an increase in skin temperature, swelling and itchiness.
Ingestion of even small amounts of this product may cause health problems (stomach pain, nausea, sickness, diarrhoea).

Inhalation of this product causes sensitization, which may 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. Contact with skin 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, scurves, ulcerations and exudative phenomena, whose intensity varies according to the 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.
This product may have a degreasing action on the skin, producing dryness and chapped skin after repeated exposure.

Xylene (MIXTURE OF ISOMERS): toxic effect on the central nervous system (encephalopathy); Irritating to the skin, conjunctiva, cornea and respiratory system.
Specific target organ toxicity (single exposure):
May irritate the respiratory tract.
Specific target organ toxicity (repeated exposure):
Target Organs: the auditory system
May cause damage to organs through prolonged exposure or repeated.
Aspiration toxicity:
May be fatal if swallowed and enters airways.
Acute effects: Harmful in contact with skin or if inhaled Causes skin irritation. Causes severe eye irritation.

1-METHOXY-2-PROPANOL ACETATE: the main way of entry is the skin, whereas the respiratory way is less important owing to the low vapour tension of the product. Concentrations above 100 ppm cause eye irritation, nose and oropharynx. At 1000 ppm disturbance in the equilibrium and severe eye irritation is observed. Clinical and biological examinations carried out on exposed volunteers revealed no anomalies. Acetate produces greater skin and ocular irritation on direct contact. No chronic effects have been reported in man.

ETHYLBENZENE: like the benzene homologues, may exert an effect on the CNS with depression, narcosis, often preceded by dizziness and accompanied by headache. It is irritating to the skin, conjunctivae and respiratory apparatus.

2,4 - / 2,6-toluene-diisocyanate: Harmful in contact with skin (classification 67/548/EEC and 1272/2008/EC)
LOAEL: 0.05 ppm Application method: Inahlative
Species: rat, Male / Female
Dosage levels of 0 - 0.05 to 0.15 ppm
Duration of exposure: 2 y
Frequency of treatment: 6 hours per day, 5 days a week
Target Organs: Mucous nasal
Substance to be tested: as steam
Method: OECD Test Guideline 453
LOAEL: 0.05 ppm
Application method: Inahlative Species: rat, Male / Female
Dosage levels of 0 - 0.05 to 0.15 ppm
Duration of exposure: 2 y
Frequency of treatment: 6 hours per day, 5 days a week
Target Organs: nasal mucosa, Lungs
Substance to be tested: as steam
Method: OECD Test Guideline 453

Carcinogenicity - Species: rat, Male / Female
Application method: Inahlative
Dosage levels of 0 - 0.05 to 0.15 ppm
Substance to be tested: as steam
Duration of exposure: 2 y
Frequency of treatment: 6 hours / day 7 days / week
Method: OECD Test Guideline 453
No increase in tumor incidence.
Species: rat, Male / Female
Application method: Inahlative
Dosage levels of 0 - 0.05 to 0.15 ppm
Substance to be tested: as steam
Duration of exposure: 2 y
Frequency of treatment: 6 hours / day 7 days / week
Method: OECD Test Guideline 453
No increase in tumor incidence.

Reproductive Toxicity / Teratogenicity:
NOAEL (teratogenicity) 0.5 ppm
NOAEL (maternal) 0.1 ppm
NOAEL (developmental toxicity) 0.1 ppm
Species: Rat, female Application method: Inahlative

Dosage levels of 0 - 0.02 to 0.10 - 0.50 ppm
Frequency of treatment: 6 hours / day (Exposure time 10 days (6-15 pc))
Period: 21 d
Substance to be tested: as steam
Method: OECD Test Guideline 414
Did not show teratogenic effects in animal experiments.

Genotoxicity in vivo:Micronucleus test
Species: rat, Male / Female
Application method: Inahlative
Exposure duration: 6 h Result: negative
Method: OECD Test Guideline 474
Substance to be tested: as steam

Specific target organ toxicity (single exposure):
Exposure Mode: Inahlatiion
Target Organs: Respiratory
May irritate the respiratory tract.
Mixture of isomers of xylene
May irritate the respiratory tract

CMR rating:
Carcinogenicity: animal testing did not show any carcinogenic effects as a result of inhalation. The EU classifies this product as a carcinogen. suspected of
cause cancer (Carc 2).
Mutagenicity: In vitro tests showed mutagenic effects, when the in vivo assays do not have revealed. On the basis of available data, the classification criteria are not satisfied.
Teratogenicity: Did not show teratogenic effects in animal experiments. On the basis of available data, the classification criteria are not met.
Toxicity to reproduction / fertility: Animal testing did not show any effect on
fertility. On the basis of available data, the classification criteria are not satisfied.

Toxicological evaluation:
Acute Effects: Fatal if inhaled. Severe skin irritation, severe eye irritation.
Sensitization: May cause sensitization by inhalation and skin contact.
Repeated dose toxicity: Based on the available data, the classification criteria are not satisfied.

XYLENE (MIXTURE OF ISOMERS)	
LD50 (Oral):	3523 mg/kg Rat
LD50 (Dermal):	4350 mg/kg Rabbit
LC50 (Inhalation):	6350 ppm/4h Rat
ETHYLBENZENE	
LD50 (Oral):	3500 mg/kg Rat
LD50 (Dermal):	15354 mg/kg Rabbit
LC50 (Inhalation):	17,2 mg/l/4h Rat
METHYL ETHYL KETONE	
LD50 (Oral):	2737 mg/kg Rat
LC50 (Inhalation):	23,5 mg/l/8h Rat
LD50 (Dermal):	6480 mg/kg Rabbit
2,4-/2,6-toluen-diisocianato	
LD50 (Dermal):	> 9400 mg/kg Metodo: OECD TG 402
LC50 (Inhalation):	0,107 mg/l/4h Metodo: OECD TG 403

12. Ecological information.

No specific data are available for this product. Handle it according to good working practices. Avoid littering. Do not contaminate soil, sewers and waterways. Inform the competent authorities, should the product reach waterways or sewers or contaminate soil or vegetation. Please take all the proper measures to reduce harmful effects on aquifers.

12.1. Toxicity.

Xylene - The substance is toxic to aquatic organisms.
2,4 - / 2,6-toluene-diisocyanate
NOEC (reproduction) 1.1 mg / l
Species: Daphnia magna (Water flea)
Duration of exposure: 21 d
NOEC (mortality)> 1,000 mg / kg
Species: Eisenia fetida (earthworm)
Duration of exposure: 14 d

Method: OECD Test Guideline 207
NOEC (germination)> 1,000 mg / kg
Species: Avena sativa (oats)
Duration of exposure: 17 d
Method: OECD Test Guideline 208
NOEC (growth rate)> 1000 mg / kg
Species: Avena sativa (oats)
Duration of exposure: 14 d
Method: OECD Test Guideline 208
NOEC (germination)> 1,000 mg / kg
Species: Lactuca sativa (lettuce)
Duration of exposure: 17 d
Method: OECD Test Guideline 208
NOEC (growth rate)> 1000 mg / kg
Species: Lactuca sativa (lettuce)
Duration of exposure: 14 d
Method: OECD Test Guideline
Acute toxicity to the aquatic environment: Harmful to aquatic organisms.
Chronic toxicity to the aquatic environment: May cause long-term adverse effects to the aquatic environment.
Toxicity data on soil: The substance is assessed as non-critical to soil organisms.
Effect on Effluent Treatment: due to the low toxicity to bacteria, plants of biological treatment there is no risk of yield reduction purification.

XYLENE (MIXTURE OF ISOMERS)

LC50 (96h):	8,2 mg/l Oncorhynchus mykiss (trota arcobaleno)
EC50 (48h):	75,5 mg/l Daphnia magna, 24h

METHYL ETHYL KETONE

LC50 (96h):	2993 mg/l Pimephales promelas
EC50 (48h):	308 mg/l Daphnia magna

12.2. Persistence and degradability.
2,4 - / 2,6-toluene-diisocyanate
Stability in water - Type of test: Hydrolysis
Half-life: 0.5 h at 27 ° C
The substance hydrolyses rapidly in water.
Photodegradation - Type of test: phototransformation in air. Temperature: 25 ° C
Sensitizer: OH Radicals
Half-life (indirect photolysis): 2 d
Following evaporation or exposure to air, the product is moderately degraded through photochemical processes.

The isocyanate reacts with water at the interface, forming CO2 and a solid insoluble product with high melting point (polyurea). This reaction is accelerated by surfactants (eg. Liquid soap) and water-soluble solvents. According to current experience, polyurea is inert and non-degradable.

12.3. Bioaccumulative potential.
2,4 - / 2,6-toluene-diisocyanate
It is not to be expected accumulation in aquatic organisms.

12.4. Mobility in soil.
2,4 - / 2,6-toluene-diisocyanate
Adsorption / Soil not applicable.

12.5. Results of PBT and vPvB assessment.
Information not available.

12.6. Other adverse effects.
Information not available.

13. Disposal considerations.

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.

CONTAMINATED PACKAGING
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

The valid EEC waste code are largely source-related; the manifacturer is, therefore, unable to specify waste codes for products used in various sectors.

CER-code (suggested): 08 04 09.

14. Transport information.

These goods must be transported by vehicles authorized to the carriage of dangerous goods according to the provisions set out in the current edition of the Code of International Carriage of Dangerous Goods by Road (ADR) and in all the applicable national regulations.
These goods must be packed in their original packagings or in packagings made of materials resistant to their content and not reacting dangerously with it. People loading and unloading dangerous goods must be trained on all the risks deriving from these substances and on all actions that must be taken in case of emergency situations.

Road and rail transport:

ADR/RID Class:	3	UN:	1866
Packing Group:	II		
Label:	3		
Nr. Kemler:	33		
Limited Quantity.	5 L		
Tunnel restriction code.	(D/E)		
Proper Shipping Name:	RESIN SOLUTION		
Special Provision:	640D		

Carriage by sea (shipping):

IMO Class:	3	UN:	1866
Packing Group:	II		
Label:	3		
EMS:	F-E , S-E		
Marine Pollutant.	NO		
Proper Shipping Name:	RESIN SOLUTION		

Transport by air:

IATA:	3	UN:	1866
Packing Group:	II		
Label:	3		
Cargo:			
Packaging instructions:	364	Maximum quantity:	60 L
Pass.:			
Packaging instructions:	353	Maximum quantity:	5 L
Special Instructions:	A3		
Proper Shipping Name:	RESIN SOLUTION		

15. Regulatory information.

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

Seveso category. 7b

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006.
Product.
Point. 3 - 40

Substances in Candidate List (Art. 59 REACH).
None.

Substances subject to authorisarion (Annex XIV REACH).
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.

15.2. Chemical safety assessment.

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

16. Other information.

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

Eye Irrit. 2	Eye irritation, category 2
Skin Sens. 1	Skin sensitization, category 1
Flam. Liq. 2	Flammable liquid, category 2
STOT SE 3	Specific target organ toxicity - single exposure, category 3
Flam. Liq. 3	Flammable liquid, category 3
Acute Tox. 4	Acute toxicity, category 4
Skin Irrit. 2	Skin irritation, category 2
Carc. 2	Carcinogenicity, category 2
Acute Tox. 1	Acute toxicity, category 1
Resp. Sens. 1	Respiratory sensitization, category 1
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic toxicity category 3
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H351	Suspected of causing cancer <state route of exposure if it is conclusively proven that no other routs of exposure cause the hazard>.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H312	Harmful in contact with skin.
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.
H336	May cause drowsiness or dizziness.
H412	Harmful to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.

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

R10	FLAMMABLE.
R11	HIGHLY FLAMMABLE.
R20	HARMFUL BY INHALATION.
R20/21	HARMFUL BY INHALATION AND IN CONTACT WITH SKIN.
R26	VERY TOXIC BY INHALATION.
R36	IRRITATING TO EYES.
R36/37/38	IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
R38	IRRITATING TO SKIN.
R40	LIMITED EVIDENCE OF A CARCINOGENIC EFFECT.
R42/43	MAY CAUSE SENSITIZATION BY INHALATION AND SKIN CONTACT.
R43	MAY CAUSE SENSITIZATION BY SKIN CONTACT.
R52/53	HARMFUL TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT.
R66	REPEATED EXPOSURE MAY CAUSE SKIN DRYNESS OR CRACKING.
R67	VAPOURS MAY CAUSE DROWSINESS AND DIZZINESS.

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. The Merck Index. - 10th Edition
8. Handling Chemical Safety

9. Niosh - Registry of Toxic Effects of Chemical Substances
10. INRS - Fiche Toxicologique (toxicological sheet)
11. Patty - Industrial Hygiene and Toxicology
12. N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
13. 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.

Changes to previous review:
The following sections were modified:
01 / 03 / 08 / 11 / 12.