MATERIAL SAFETY DATA SHEET

RARALKYD UA-15546 WS

1 IDENTIFICATION OF THE PRODUCT AND THE COMPANY

1.1 IDENTIFICATION OF THE SUBSTANCE / PREPARATION:

Product Name: RARALKYD UA-15546

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

Intended use

Alkyd Resin / Decorative and Industrial Coatings

1.3 IDENTIFICATION OF THE COMPANY:

RAR Resin & Chemical Industries JLT
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Tel: +971 4 4356516 / +971 4 4356517 Email: info@rarresin.com
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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.
Danger Symbols:
Xn-N
R phrases:

2.2 LABEL ELEMENTS

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

HARMFUL	DANGEROUS FOR THE ENVIRONMENT
R10	FLAMMABLE.
R51/53	TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT.
R65	HARMFUL: MAY CAUSE LUNG DAMAGE IF SWALLOWED.
R66	REPEATED EXPOSURE MAY CAUSE SKIN DRYNESS OR CRACKING.
R67	VAPOURS MAY CAUSE DROWSINESS AND DIZZINESS.
S29	DO NOT EMPTY INTO DRAINS.
S43	IN CASE OF FIRE, USE USE FOAM, DRY CHEMICAL OR CARBON DIOXIDE(CO2) . DO NOT USE STRAIGHT STREAMS OF WATER.
S61	AVOID RELEASE TO THE ENVIRONMENT. REFER TO SPECIAL INSTRUCTIONS/SAFETY DATA SHEETS.
S62	IF SWALLOWED, DO NOT INDUCE VOMITING: SEEK MEDICAL ADVICE IMMEDIATELY AND SHOW THIS CONTAINER OR LABEL.
Contains:	Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)

2.3 OTHER HAZARDS

Information not available.

3 COMPOSITION/INFORMATION ON INGREDIENTS

3.1 SUBSTANCES

Information not available.

3.2 MIXTURES

Contains:

Identification.	**Conc. %.**	**Classification 67/548/EEC.**	**Classification 1272/2008 (CLP).**
Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)			
CAS. -	43 - 47	R10, R66, R67, Xn R65, N R51/53	Flam. Liq. 3 H226, Asp. Tox. 1 H304, STOT SE 3 H336, Aquatic Chronic 2 H411
EC. 919-446-0			
INDEX. -			
Reg. no. 01-2119458049-33			
XYLENE (MIXTURE OF ISOMERS)			
CAS. 1330-20-7	1.5 - 2	R10, Xn R20/21, Xi R38, Note C	Flam. Liq. 3 H226, Acute Tox. 4 H312, Acute Tox. 4 H332, Skin Irrit. 2 H315, Note C
EC. 215-535-7			
INDEX. 601-022-00-9			
ETHYLBENZENE			
CAS. 100-41-4	0.4 - 0.45	F R11, Xn R20	Flam. Liq. 2 H225, Acute Tox. 4 H332
EC. 202-849-4			
INDEX. 601-023-00-4			

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.

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)

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.

5 FIRE FIGHTING MEASURES.

5.1 EXTINGUISHING MEDIA.

SUITABLE EXTINGUISHING EQUIPMENT
Extinguishing substances are: carbon dioxide, foam, chemical powder. For product loss or leakage that has not caught fire, water spray can be used to disperse flammable vapours and protect those trying to stem the leak.

UNSUITABLE EXTINGUISHING EQUIPMENT
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.

5.3 ADVICE FOR FIRE FIGHTERS

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).

6 ACCIDENTAL RELEASE MEASURES.

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES.

FOR LIQUID PRODUCTS:
Block the leakage if there is no hazard.

FOR SOLID PRODUCTS:
If there are no contraindications, spray powder with water to prevent the formation of dust. Avoid breathing vapours/mists/gases.
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.

Send away individuals who are not suitably equipped. Eliminate all sources of ignition (cigarettes, flames, sparks, etc.) from the leakage site.

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.

FOR LIQUID PRODUCTS: 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.

FOR SOLID PRODUCTS: Use spark-proof mechanical equipment to collect the leaked product and place it in containers for recovery or disposal. If there are no contraindications, use jets of water to eliminate product residues.
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.

7 HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING.

Keep away from heat, sparks and naked flames; do not smoke or use matches or lighters. Without adequate ventilation, vapours may accumulate at ground level and, if ignited, catch fire even at a distance, with the danger of backfire. Avoid bunching of electrostatic charges. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat. Avoid leakage of the product into the environment.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPABILITIES.

Store only in the original container. Store in a well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition. Keep containers away from any incompatible materials, see section 10 for details.

7.3 SPECIFIC END USES(S).

Information not available.

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

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)

Predicted no-effect concentration - PNEC.	
Normal value for the atmosphere	VND
Normal value for the food chain (secondary poisoning)	VND
Normal value for the terrestrial compartment	VND
Normal value in fresh water	VND
Normal value in marine water	VND
Normal value for fresh water sediment	VND
Normal value for marine water sediment	VND
Normal value of STP microorganisms	VND

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers.				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Acute local	Chronic systemic
Oral.	VND	VND	VND	26 mg/kg/d	VND	VND	VND	VND
Inhalation.	VND	VND	VND	71 mg/m3	VND	VND	VND	330 mg/m3
Skin.	VND	VND	VND	26 mg/kg/d	VND	VND	VND	44 mg/kg/d

XYLENE (MIXTURE OF ISOMERS)

Threshold Limit Value.

Type	Country	TWA/8h		TEL/15min		
		mg/m3	ppm	mg/m3	ppm	
WEL	UK	220	50	441	100	
OEL	IRL	221	50	442	100	SKIN
OEL	EU	221	50	442	100	SKIN
TLV-ACGIH		434	100	651	50	

ETHYLBENZENE

Threshold Limit Value.

Type	Country	TWA/8h	STEL/15min			
		mg/m3	ppm	mg/m3	ppm	
WEL	UK	441	100	552	125	SKIN
OEL	IRL	442	100	884	200	SKIN
OEL	EU	442	100	884	200	SKIN
TLV-ACGIH		20	100		87	

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: 525 mg/m3.

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. Personal protection equipment must comply with the rules in force indicated below.

HAND PROTECTION

Protect hands with category II (ref. Directive 89/686/EEC and standard EN 374) work gloves, such as those in PVC, neoprene, nitryl 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 A 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 the presence of risks of exposure to splashes or squirts during work, adequate mouth, nose and eye protection should be used to prevent accidental absorption.

ENVIRONMENTAL EXPOSURE CONTROLS.

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

9 PHYSICAL AND CHEMICAL PROPERTIES.

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES.

Appearance	dense liquid
Colour	yellowish
Odour	characteristic of solvent
Odour threshold.	Not available.
pH.	Not available.
Melting point / freezing point.	Not available.
Initial boiling point.	> 135 °C.
Boiling range.	Not available.
Flash point.	> 30 °C.
Evaporation Rate	0.13
Flammability of solids and gases	Not available.
Lower inflammability limit.	0.6 % (V/V).
Upper inflammability limit.	7 % (V/V).
Lower explosive limit.	Not available.
Upper explosive limit.	Not available.
Vapour pressure.	20.25 mmHg
Vapour density	>1 @ 101 kPa
Relative density.	0.988 Kg/l
Solubility	Not available.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature.	> 200 °C.
Decomposition temperature	Not available.
Viscosity	YZ (Gardner Scale,25°C,@55% WS)
Explosive properties	Not available.

9.2 OTHER INFORMATION

Solid content.	55.00 %
VOC (Directive 1999/13/EC) :	45.00 % - 296.33 g/litre.
VOC (volatile carbon) :	43 % - 267.92 g/litre.

10 STABILITY AND REACTIVITY

10.1 REACTIVITY

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

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.
ETHYLBENZENE: reacts violently with strong oxidising agents and attacks various types of plastics. Can form explosive mixtures with the air.

10.4 CONDITIONS TO AVOID

Avoid overheating. Avoid bunching of electrostatic charges. Avoid all sources of ignition.

10.5 INCOMPATIBLE MATERIALS.

Information not available.

10.6 HAZARDOUS DECOMPOSTION PRODUCTS.

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

ETHYLBENZENE: methane, styrene, hydrogen, ethane.

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.
The introduction of even small quantities of this liquid into the respiratory system in case of ingestion or vomit may cause bronchopneumonia and pulmonary edema.
This product may have a degreasing action on the skin, producing dryness and chapped skin after repeated exposure.
This product contains highly volatile substances, which may cause serious depression of the central nervous system (CNS) and have negative effects, such as drowsiness, dizziness, slow reflexes, narcosis.

Vapour concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anaesthetic and may have other central nervous system effects. Prolonged and/or repeated skin contact with low viscosity materials may defat the skin resulting in possible irritation and dermatitis. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

XYLENE (MIXTURE OF ISOMERS): has a toxic effect on the CNS (encephalopathies). Irritating to the skin, conjunctivae, cornea and respiratory apparatus.

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.

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)
LD50 (Oral). > 5000 mg/kg
LD50 (Dermal). > 4 ml/kg
LC50 (Inhalation). > 13.1 mg/l

XYLENE (MIXTURE OF ISOMERS)
LD50 (Oral). 3523 mg/kg Rat
LD50 (Dermal). 4350 mg/kg Rabbit
LC50 (Inhalation). 26 mg/l/4h Rat

ETHYLBENZENE
LD50 (Oral). 3500 mg/kg Rat
LD50 (Dermal). 15354 mg/kg Rabbit
LC50 (Inhalation). 17.2 mg/l/4h Rat

12 ECOLOGICAL INFORMATION.

This product is dangerous for the environment and is toxic for aquatic organisms. In the long term, it may even have negative effects on acquatic environment.
The information given is based on data available for the material, the components of the material, and similar materials.

12.1 TOXICITY.

HYDROCARBONS, C9-C12, n-ALKANES, ISOALKANES, CYCLICS, AROMATICS (2-25%)-->
Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)

LC50 (96h).	> 10 mg/l
EC50 (48h)	> 10 mg/l
IC50 (72h).	> 4.6 mg/l
Chronic NOEC for Algae / Aquatic Plants.	0.097 mg/l

12.2 PERSISTENCE AND DEGRADABILITY.

HYDROCARBONS, C9-C12, n-ALKANES, ISOALKANES, CYCLICS, AROMATICS (2-25%)
Biodegradation:
Material -- Expected to be readily biodegradable.
Hydrolysis:
Material -- Transformation due to hydrolysis not expected to be significant.
Photolysis:
Material -- Transformation due to photolysis not expected to be significant.
Atmospheric Oxidation:
Material -- Expected to degrade rapidly in air
.

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)
Rapidly biodegradable.

12.3 BIOACCUMULATIVE POTENTIAL.

Not determined.

12.4 MOBILITY IN SOIL.

HYDROCARBONS, C9-C12, n-ALKANES, ISOALKANES, CYCLICS, AROMATICS (2-25%) -->
Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

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**.**

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.
Waste transportation may be subject to ADR restrictions.

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

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:	III		
Label:	3		
Nr. Kemler:	30		
Limited Quantity.	5 L		
Tunnel restriction code.	(D/E)		
Proper Shipping Name:	RESIN SOLUTION		
Special Provision:	640E		

Carriage by sea (shipping):

IMO Class:	3	UN:	1866
Packing Group:	III		
Label:	3		
EMS:	F-E ,	S-E	
Marine Pollutant.	YES		
Proper Shipping Name:	RESIN SOLUTION (Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%))		

Transport by air:

IATA:	3	UN:	1866
Packing Group:	III		
Label:	3		
Cargo:			
Packaging instructions:	366	Maximum quantity:	220 L
Pass.:			
Packaging instructions:	355	Maximum quantity:	60 L
Special Instructions:	A3		
Proper Shipping Name:		RESIN SOLUTION	

15 REGULATORY INFORMATION.

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

Seveso category. 9ii, 6

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.

Substances subject to exportation reporting pursuant to (EC) Reg. 689/2008:

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.

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:

Flam. Liq. 2	Flammable liquid, category 2
Flam. Liq. 3	Flammable liquid, category 3
Acute Tox. 4	Acute toxicity, category 4
Asp. Tox. 1	Aspiration hazard, category 1
Skin Irrit. 2	Skin irritation, category 2
STOT SE 3	Specific target organ toxicity - single exposure, category 3
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic toxicity, category 2
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.

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.
R38	IRRITATING TO SKIN.
R51/53	TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT.
R65	HARMFUL: MAY CAUSE LUNG DAMAGE IF SWALLOWED.
R66	REPEATED EXPOSURE MAY CAUSE SKIN DRYNESS OR CRACKING.
R67	VAPOURS MAY CAUSE DROWSINESS AND DIZZINESS.

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.

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. The Merck Index. - 10th Edition
9. Handling Chemical Safety
10. Niosh - Registry of Toxic Effects of Chemical Substances
11. INRS - Fiche Toxicologique (toxicological sheet)
12. Patty - Industrial Hygiene and Toxicology
13. N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
14. 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.