Safety data sheet

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

1.1. Product identifier

Code:	**902**
Product name	**81341 UV EDGEBENDING HIGH GLOSS 81341**

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

Intended use	**UV CURABLE EDGEBENDING COATING**

1.3. Details of the supplier of the safety data sheet

Name	**FRIMPEKS KIMYA VE ETIKET SAN.TIC. A.S.**
Full address	**Haciseremet Mevkii Sanayi Bölgesi, Baraj Yolu 4/93 No.:53**
District and Country	**59850 Velimese / Corlu (Turkey)** **Turkey** **Tel. +90 282 674 5200** **Fax +90 282 674 4353**
e-mail address of the competent person responsible for the Safety Data Sheet	**vincenzo.benessere@frimpeks.com**
Product distribution by	**Niv Asa**

1.4. Emergency telephone number

For urgent inquiries refer to	**+90 212 867 1000**

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 EC Regulation 1272/2008 (CLP) (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:

Eye Irrit. 2	H319
Skin Irrit. 2	H315
Skin Sens. 1	H317

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

Danger Symbols:	Xi
R phrases:	36/38-43

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 EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:

Signal words: Warning

Hazard statements:

SECTION 2. Hazards identification. ... / >>

H319	Causes serious eye irritation.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.

Precautionary statements:

P264	Wash . . . thoroughly after handling.
P280	Wear protective gloves / protective clothing / eye protection / face protection.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P333+P313	If skin irritation or rash occurs: Get medical advice / attention.

Contains: bisphenol-A-epoxy acrylate
2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediylester
1,6-HEXANEDIOL DIACRYLATE

2.3. Other hazards.

Information not available.

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).
INERT			
CAS. -	50 - 100		
EC. -			
INDEX. -			
1,6-HEXANEDIOL DIACRYLATE			
CAS. *13048-33-4*	30 - 50	Xi R36/38, Xi R43, Note D	Eye Irrit. 2 H319, Skin Irrit. 2 H315, Skin Sens. 1 H317, Note D
EC. *235-921-9*			
INDEX. *607-109-00-8*			
Reg. no. *01-2119484737-22-0005*			
bisphenol-A-epoxy acrylate			
CAS. *55818-57-0*	9 - 30	R53, Xi R43	Skin Sens. 1 H317
EC. *500-130-2*			
INDEX. -			
Reg. no. *01-2119490020-53*			
Alpha hydroxy ketone, difunctional			
CAS. -	1 - 3	Repr. Cat. 3 R62	Repr. 2 H361f
EC. *402-990-3*			
INDEX. -			
Reg. no. *01-0000015270-82-0000*			
2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediylester			
CAS. *15625-89-5*	1 - 5	Xi R36/38, Xi R43, Note D	Eye Irrit. 2 H319, Skin Irrit. 2 H315, Skin Sens. 1 H317, Note D
EC. *239-701-3*			
INDEX. *607-111-00-9*			
Reg. no. *01-2119489896-11-0001*			
2-Hydroxy-2-methylpropiophenon			
CAS. *7473-98-5*	1 - 5	Xn R22	Acute Tox. 4 H302
EC. *231-272-0*			
INDEX. -			
Reg. no. *01-2119472306-39-0000*			
2-METHOXY-1-METHYLETHYL ACETATE			
CAS. *108-65-6*	0 - 0.5	R10	Flam. Liq. 3 H226
EC. *203-603-9*			
INDEX. *607-195-00-7*			
Reg. no. *01- 2119475791- 29*			

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. Wash immediately with plenty of water. If irritation persists, get medical advice/attention. Wash contaminated clothing before using it again.

INHALATION: Remove to open air. In the event of breathing difficulties, get medical advice/attention immediately.

INGESTION: Get medical advice/attention. Induce vomiting only if indicated by the doctor. Never give anything by mouth to an unconscious person, unless 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

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 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.

SECTION 7. Handling and storage. ... / >>

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

bisphenol-A-epoxy acrylate

Predicted no-effect concentration - PNEC.		
Normal value for the terrestrial compartment	0.05	mg/kg
Normal value in fresh water	0.003	mg/l
Normal value for water, intermittent release	0.013	mg/l
Normal value in marine water	0.0003	mg/l
Normal value for fresh water sediment	0.5	mg/kg
Normal value for marine water sediment	0.5	mg/kg
Normal value of STP microorganisms	10	mg/l

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	Chronic local	Chronic systemic
Oral.	VND	0,75 mg/kg	VND	0,75 mg/kg				
Inhalation.	VND	0,75 mg/m3	VND	0,75 mg/m3	VND	12,3 mg/m3	VND	12,3 mg/m3
Skin.	VND	3,6 mg/kg	VND	3,6 mg/kg	VND	8,3 mg/kg	VND	8,3 mg/kg

2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediylester

Predicted no-effect concentration - PNEC.		
Normal value for the food chain (secondary poisoning)	5.6	mg/kg
Normal value for the terrestrial compartment	0.0043	mg/kg
Normal value in fresh water	0.00147	mg/l
Normal value for water, intermittent release	0.0147	mg/l
Normal value in marine water	0.000147	mg/l
Normal value for fresh water sediment	0.0062	mg/kg
Normal value for marine water sediment	0.00062	mg/kg
Normal value of STP microorganisms	6.25	mg/l

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	Chronic local	Chronic systemic
Oral.			VND	1,39 mg/kg				
Inhalation.			VND	4.9 mg/m3			VND	16,2 mg/m3
Skin.			VND	0,48 mg/kg			VND	0.80 mg/kg

SECTION 8. Exposure controls/personal protection. ... / >>

2-Hydroxy-2-methylpropiophenon

Predicted no-effect concentration - PNEC.

Normal value for the terrestrial compartment	674	mg/kg
Normal value in fresh water	0.00195	mg/l
Normal value for water, intermittent release	0.0195	mg/l
Normal value in marine water	0.000195	mg/l
Normal value for fresh water sediment	0.00514	mg/kg
Normal value for marine water sediment	0.000514	mg/kg
Normal value of STP microorganisms	45	mg/l

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	Chronic local	Chronic systemic
Inhalation.					VND	3,5 mg/m3	VND	3,5 mg/m3
Skin.					VND	1.25 mg/kg	VND	1,25 mg/kg

2-METHOXY-1-METHYLETHYL ACETATE

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
OEL	EU	275	50	550	100	SKIN
OEL	IRL	275	50	550	100	SKIN
WEL	UK	274	50	548	100	

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.

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

SECTION 9. Physical and chemical properties.

9.1. Information on basic physical and chemical properties.

Appearance	Not available.
Colour	Not available.
Odour	Not available.
Odour threshold.	Not available.
pH.	Not available.
Melting point / freezing point.	Not available.

SECTION 9. Physical and chemical properties. ... / >>

Initial boiling point.		Not available.
Boiling range.		Not available.
Flash point.	>	100 °C.
Evaporation rate		Not available.
Flammability (solid, gas)		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.		Not available.
Solubility		Not available.
Partition coefficient: n-octanol/water		Not available.
Auto-ignition temperature.		Not available.
Decomposition temperature.		Not available.
Viscosity		Not available.
Explosive properties		Not available.
Oxidising properties		Not available.

9.2. Other information.

Information not available.

SECTION 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.

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.

1-METHOXY-2-PROPANOL ACETATE: may react violently with oxidising agents and strong acids and alkaline metals.

10.4. Conditions to avoid.

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

1-METHOXY-2-PROPANOL ACETATE: store in an inert atmosphere, sheletered from moisture because it hydrolises easily.

10.5. Incompatible materials.

1-METHOXY-2-PROPANOL ACETATE: oxidising agents, strong acids and alkaline metals.

10.6. Hazardous decomposition products.

Information not available.

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.

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.
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.

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.

SECTION 11. Toxicological information. ... / >>

2-Hydroxy-2-methylpropiophenon
LD50 (Oral). 2000 mg/Kg rat

bisphenol-A-epoxy acrylate
LD50 (Oral). 30000 mg/kg Rat
LD50 (Dermal). > 2000 mg/kg Rat

2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediylester
LD50 (Oral). > 5000 mg/kg rat
LD50 (Dermal). > 5000 mg/kg rat

2-METHOXY-1-METHYLETHYL ACETATE
LD50 (Oral). 8530 mg/kg Rat
LD50 (Dermal). > 5000 mg/kg Rat

1,6-HEXANEDIOL DIACRYLATE
LD50 (Oral). > 5000 mg/kg RAT
LD50 (Dermal). 3560 mg/kg RABBIT

SECTION 12. Ecological information.

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or sewers or contaminate soil or vegetation.

12.1. Toxicity.

2-Hydroxy-2-methylpropiophenon
LC50 - for Fish. 160 mg/l/96h Leuciscus idus
EC50 - for Crustacea. 119 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants. 1.95 mg/l/72h Desmodesmus subspicatus

bisphenol-A-epoxy acrylate
LC50 - for Fish. 1.3 mg/l/96h Trout
EC50 - for Crustacea. 2.1 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants. 11 mg/l/72h Algae

2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediylester
LC50 - for Fish. > 1.2 mg/l/96h Leuciscus idus
EC50 - for Crustacea. 19.9 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants. 4.9 mg/l/72h Scenedesmus subspicatus

1,6-HEXANEDIOL DIACRYLATE
LC50 - for Fish. 1 mg/l/96h Leuciscus idus
EC50 - for Algae / Aquatic Plants. 1 mg/l/72h Scenedesmus subspicatus

12.2. Persistence and degradability.

bisphenol-A-epoxy acrylate
NOT rapidly biodegradable.

2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediylester
Rapidly biodegradable.

1,6-HEXANEDIOL DIACRYLATE
Rapidly biodegradable.

12.3. Bioaccumulative potential.
Information not available.

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.

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.
Product.
Point. 3

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.

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:

Flam. Liq. 3	Flammable liquid, category 3
Repr. 2	Reproductive toxicity, category 2
Acute Tox. 4	Acute toxicity, category 4
Eye Irrit. 2	Eye irritation, category 2
Skin Irrit. 2	Skin irritation, category 2
Skin Sens. 1	Skin sensitization, category 1
H226	Flammable liquid and vapour.
H361f	Suspected of damaging fertility.
H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.

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

R10	FLAMMABLE.
R22	HARMFUL IF SWALLOWED.
R36/38	IRRITATING TO EYES AND SKIN.

SECTION 16. Other information. ... / >>

R43	MAY CAUSE SENSITISATION BY SKIN CONTACT.
R53	MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT.
Repr. Cat. 3	Reproductive toxicity, fertility, category 3.
R62	POSSIBLE RISK OF IMPAIRED FERTILITY.

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.