Safety data sheet

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

1.1. Product identifier

Code:	**F00006 - (05220 e seg.)**
Product name	**SHAMPOO PER AUTO**

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

Intended use **water-based cleaner for the bodywork and mechanical industry.**

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 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 Dam. 1	H318
Skin Irrit. 2	H315

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

Danger Symbols:
Xi
R phrases:
41

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: Danger

Hazard statements:

H318 Causes serious eye damage.
H315 Causes skin irritation.

Precautionary statements:

P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P264 Wash the hands thoroughly after handling.
P280 Wear protective gloves and protective clothing, eye protection.
P309+P311 IF exposed or if you feel unwell: Call a POISON CENTER or doctor / physician.

Contains: Sodium C10-16 alkylethoxy sulphate
Benzenesulfonic acid,C10-13-alkyl derivs., sodium salts

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).
Sodium C10-16 alkylethoxy sulphate			
CAS. -	8,5 - 10	Xi R38, Xi R41	Eye Dam. 1 H318, Skin Irrit. 2 H315, Aquatic Chronic 3 H412
EC. -			
INDEX. -			
Reg. no. 01-2119488639-16			
Benzenesulfonic acid,C10-13-alkyl derivs., sodium salts			

CAS. 68411-30-3 EC. 270-115-0 INDEX. - Reg. no. 01-2119489428-22	4,5 - 5	Xn R22, Xi R38, Xi R41	Acute Tox. 4 H302, Eye Dam. 1 H318, Skin Irrit. 2 H315, Aquatic Chronic 3 H412
ETHANOLAMINE			
CAS. 141-43-5 EC. 205-483-3 INDEX. 603-030-00-8 Reg. no. 01-2119486455-28	0,7 - 0,8	C R34, Xn R20/21/22	Acute Tox. 4 H302, Acute Tox. 4 H312, Acute Tox. 4 H332, Skin Corr. 1B H314, STOT SE 3 H335
HYDROCHLORIC ACID			
CAS. - EC. 231-595-7 INDEX. 017-002-01-X Reg. no. 01-2119484862-27	0,4 - 0,45	C R34, Xi R37, Note B	Met. Corr. 1 H290, Skin Corr. 1B H314, STOT SE 3 H335, Note B

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 30-60 minutes, opening the eyelids fully. Get medical advice/attention.
SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.
INGESTION: Have the subject drink as much water as possible. Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.
INHALATION: Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.

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
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.

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 incompatibilities.

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 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

Sodium C10-16 alkylethoxy sulphate

Predicted no-effect concentration - PNEC.

Normal value for the terrestrial compartment	0,946	mg/kg
Normal value in fresh water	0,24	mg/l
Normal value for water, intermittent release	0,071	mg/l
Normal value in marine water	0,024	mg/l
Normal value for fresh water sediment	5,45	mg/kg
Normal value for marine water sediment	0,545	mg/kg
Normal value of STP microorganisms	10000	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	15 mg/kg bw/d				
Inhalation.			VND	52 mg/m3			VND	175 mg/m3
Skin.			VND	1650 mg/kg bw/d			VND	2750 mg/kg bw/d

Benzenesulfonic acid,C10-13-alkyl derivs., sodium salts

Predicted no-effect concentration - PNEC.

Normal value for the terrestrial compartment	8,1	mg/kg
Normal value in fresh water	0,268	mg/l
Normal value for water, intermittent release	0,0167	mg/l
Normal value in marine water	0,0268	mg/l
Normal value of STP microorganisms	3,43	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	0,85 mg/kg bw/d				
Inhalation.			VND	3 mg/m³			VND	12 12 mg/m³
Skin.			VND	85 mg/kg bw/d			VND	170 mg/kg bw/d

ETHANOLAMINE

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
TLV-ACGIH		7,5	3	15	6	
OEL	IRL	2,5	1	7,6	3	SKIN

OEL	EU	2,5	1	7,6	3	SKIN
WEL	UK	2,5	1	7,6	3	SKIN

Predicted no-effect concentration - PNEC.		
Normal value for the terrestrial compartment	0,035	mg/kg
Normal value in fresh water	0,085	mg/l
Normal value for water, intermittent release	0,025	mg/l
Normal value in marine water	0,0085	mg/l
Normal value for fresh water sediment	0,425	mg/kg
Normal value for marine water sediment	0,0425	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	3,75 mg/kg				
Inhalation.			2 mg/m3	VND			3,3 mg/m3	VND
Skin.			VND	0,24 mg/kg			VND	1 mg/kg

HYDROCHLORIC ACID

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min	
		mg/m3	ppm	mg/m3	ppm
OEL	EU	8	5	15	10
TLV-ACGIH				2,9 (C)	2 (C)

Predicted no-effect concentration - PNEC.		
Normal value in fresh water	0,036	mg/l
Normal value for water, intermittent release	0,045	mg/l
Normal value in marine water	0,036	mg/l
Normal value of STP microorganisms	0,036	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
Inhalation.					VND	15 mg/m3	VND	8 mg/m3

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 a hood visor or protective visor combined with airtight 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	liquid
Colour	yellowish
Odour	mild
Odour threshold.	Not available.
pH.	8,5
Melting point / freezing point.	Not available.
Initial boiling point.	100 °C.
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.	1,000 Kg/l
Solubility	miscible with water
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.

VOC (Directive 1999/13/EC) :	0,70 %	-	7,00	g/litre.
VOC (volatile carbon) :	0,28 %	-	2,75	g/litre.

SECTION 10. Stability and reactivity.

10.1. Reactivity.

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

ACIDO CLORIDRICO IN SOLUZIONE: La soluzione di HCl in acqua è un acido forte, reagisce violentemente con le basi ed è corrosiva.

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.

HYDROCHLORIC ACID: risk of explosion on contact with alkaline metals, aluminium powder, hydrogen cyanide, alcohol.
ETHANOLAMINE: can react dangerously with: acrylonitrile, chloroepoxypropane, chlorosulphuric acid, hydrogen chloride, iron-sulphur compounds, acetic acid, acetic anhydride, mesityl oxide, nitric acid, sulphuric acid, strong mineral acids, vinyl acetate, cellulose nitrate.

10.4. Conditions to avoid.

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

ETHANOLAMINE: avoid exposure to air and sources of heat.

10.5. Incompatible materials.

HYDROCHLORIC ACID: alkalis, organic substances, strong oxidants and metals.
ETHANOLAMINE: iron, strong acids and strong oxidising agents.

10.6. Hazardous decomposition products.

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

HYDROCHLORIC ACID: above decomposition temperature hydrochloric acid fumes may develop.
ETHANOLAMINE: nitrogen oxides, carbon oxides.

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 may cause serious ocular lesions, cornea opacity, iris lesions, irreversible eye coloration.
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.

ETHANOLAMINE - The product is corrosive to the eyes, extremely irritating to the skin and mucous membranes and can cause serious damage.

Sodium C10-16 alkylethoxy sulphate - Irritating to the skin. Severely irritating to eyes.

Benzenesulfonic acid,C10-13-alkyl derivs., sodium salts - Irritating to the skin. Severely irritating to eyes.

HYDROCHLORIC ACID

LC50 (Inhalation). 45,6 mg/l Ratto/5min

ETHANOLAMINE
LD50 (Oral). 1515 mg/kg Rat
LD50 (Dermal). 2504 mg/kg Rat
LC50 (Inhalation). 1,48 mg/l Rat (4h)

Sodium C10-16 alkylethoxy sulphate
LD50 (Oral). 4100 mg/kg Rat
LD50 (Dermal). > 2000 mg/kg Rat

Benzenesulfonic acid,C10-13-alkyl derivs., sodium salts
LD50 (Oral). 1080 mg/kg Rat
LD50 (Dermal). > 2000 mg/kg Rat

SECTION 12. Ecological information.

.

12.1. Toxicity.

HYDROCHLORIC ACID
LC50 - for Fish.
282 mg/l/96h Pesce

ETHANOLAMINE
LC50 - for Fish.
349 mg/l/96h Pesce
EC50 - for Crustacea.
65 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants.
2,5 mg/l/72h Alga

Sodium C10-16 alkylethoxy sulphate
LC50 - for Fish.
1,67 mg/l/96h
EC50 - for Algae / Aquatic Plants.
47,3 mg/l/72h
Chronic NOEC for Fish.
0,268 mg/l Pesce (96 d)
Chronic NOEC for Crustacea.
1,41 mg/l Dafnia (21 d)
Chronic NOEC for Algae / Aquatic Plants.
3,1 mg/l Chlorella kessleri (15 d)

Benzenesulfonic acid,C10-13-alkyl derivs., sodium salts
LC50 - for Fish.
1,67 mg/l/96h EPA OPPTS Fish
Chronic NOEC for Fish.
0,268 mg/l (96 d)
Chronic NOEC for Crustacea.
1,41 mg/l Daphnia Magna
Chronic NOEC for Algae / Aquatic Plants.
> 4 mg/l (28 d)

12.2. Persistence and degradability.

ETHANOLAMINE - Biodegradation > 90% (21 days).
Sodium C10-16 alkylethoxy sulphate 30-60 % - Biodegradation (EU - 28 d) = 100%; (OECD 301B - CO_2 - 28 d) = 85%.
Benzenesulfonic acid,C10-13-alkyl derivs., sodium salts - biodegradability (122 d) = 70-99%.

ETHANOLAMINE
Rapidly biodegradable.

Sodium C10-16 alkylethoxy sulphate
Rapidly biodegradable.

Benzenesulfonic acid,C10-13-alkyl derivs., sodium salts
Rapidly biodegradable.
Mixture of surfactants: biodegradability > 90%.

12.3. Bioaccumulative potential.

ETHANOLAMINE - Slightly bioaccumulative.

Sodium C10-16 alkylethoxy sulphate
Partition coefficient: n-octanol/water.
0,3 mg/l
BCF.
< 3

Benzenesulfonic acid,C10-13-alkyl derivs., sodium salts
Partition coefficient: n-octanol/water.
3,32 mg/l
BCF.
< 1000

12.4. Mobility in soil.

ETHANOLAMINE - The product has very high potential for mobility.

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 manifacturer is, therefore, unable to specify waste code for products used in various sectors.
CER-code (suggested): 20 01 29.

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.

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

Ingredients according to Regulation (EC) No 648/2004

less than 5 % non-ionic surfactants

5 % or over but less than 15 % anionic surfactants

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:

Met. Corr. 1	Substance or mixture corrosive to metals, category 1
Acute Tox. 4	Acute toxicity, category 4
Skin Corr. 1B	Skin corrosion, category 1B
Eye Dam. 1	Serious eye damage, category 1
Skin Irrit. 2	Skin irritation, category 2
STOT SE 3	Specific target organ toxicity - single exposure, category 3
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic toxicity, category 3
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H412	Harmful to aquatic life with long lasting effects.

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

R20/21/22	HARMFUL BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
R22	HARMFUL IF SWALLOWED.
R34	CAUSES BURNS.
R37	IRRITATING TO RESPIRATORY SYSTEM.
R38	IRRITATING TO SKIN.
R41	RISK OF SERIOUS DAMAGE TO EYES.

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 / 05 / 06 / 08 / 09 / 10 / 11 / 12 / 15 / 16.