

Safety Data Sheet

According to U.S.A. Federal Hazcom 2012

1. Identification

1.1. Product identifier

Code: **US.585.20I.001**
Product name: **UREFIN 550/20**

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

Intended use: **PAINT - TRANSPARENT UREICO-MELAMINE FINISH**

1.3. Details of the supplier of the safety data sheet

Name: **ASTRA VERNICI S.R.L.**
Full address: **Via Della Industria, 4**
District and Country: **24052 Azzano San Paolo (BG) Italia**
Tel.: **+39 035 530019**
Fax: **+39 035 531714**
e-mail address of the competent person responsible for the Safety Data Sheet: **msds@astravernici.it**

1.4. Emergency telephone number

For urgent inquiries refer to: **+39035530019**

2. Hazards identification

2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200). The product thus requires a safety datasheet.

Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Classification and Hazard Statement

Flammable liquid, category 2	Highly flammable liquid and vapour.
Carcinogenicity, category 1A	May cause cancer.
Reproductive toxicity, category 2	Suspected of damaging fertility or the unborn child.
Aspiration hazard, category 1	May be fatal if swallowed and enters airways.
Specific target organ toxicity - repeated exposure, category 2	May cause damage to organs through prolonged or repeated exposure.
Serious eye damage, category 1	Causes serious eye damage.
Skin irritation, category 2	Causes skin irritation.
Specific target organ toxicity - single exposure, category 3	May cause respiratory irritation.
Skin sensitization, category 1	May cause an allergic skin reaction.
Specific target organ toxicity - single exposure, category 3	May cause drowsiness or dizziness.

Hazard pictograms:



Signal words:

Danger

Hazard statements:

H225	Highly flammable liquid and vapour.
H350	May cause cancer.
H361	Suspected of damaging fertility or the unborn child.
H304	May be fatal if swallowed and enters airways.
H373	May cause damage to organs through prolonged or repeated exposure.
H318	Causes serious eye damage.

2. Hazards identification ... / >>

H315	Causes skin irritation.
H335	May cause respiratory irritation.
H317	May cause an allergic skin reaction.
H336	May cause drowsiness or dizziness.

Precautionary statements:

Prevention:

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe dust / fume / gas / mist / vapours / spray.
P202	Do not handle until all safety precautions have been read and understood.
P242	Use only non-sparking tools.
P201	Obtain special instructions before use.
P280	Wear protective gloves/ protective clothing / eye protection / face protection.
P271	Use only outdoors or in a well-ventilated area.
P264	Accurately wash thoroughly after handling.
P240	Ground / bond container and receiving equipment.
P243	Take precautionary measures against static discharge.
P241	Use explosion-proof electrical / ventilating / lighting / equipment.
P272	Contaminated work clothing should not be allowed out of the workplace.

Response:

P331	Do NOT induce vomiting.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water / shower.
P310	Immediately call a POISON CENTER / doctor.
P304+P340	IF INHALED: remove person to fresh air and keep comfortable for breathing.
P302+P352	IF ON SKIN: wash with plenty of water.
P362+P364	Take off contaminated clothing and wash it before reuse.
P370+P378	In case of fire: Use dry chemical or CO2 to extinguish.
P363	Wash contaminated clothing before reuse.

Storage:

P403+P235	Store in a well-ventilated place. Keep cool.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Disposal:

P501	Dispose of contents / container through a procedure in accordance with the regulations.
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2.2. Other hazards

Additional hazards

Repeated exposure may cause skin dryness or cracking.

3. Composition/information on ingredients

3.2. Mixtures

Contains:

Identification	Conc. %	Classification:
ETHYL ACETATE		
INDEX 607-022-00-5	23.6	Flammable liquid, category 2 H225, Eye irritation, category 2 H319, Specific target organ toxicity - single exposure, category 3 H336
EC 205-500-4		
CAS 141-78-6		
REACH Reg. 01-2119475103-46-xxxx		
XYLENE		
INDEX 601-022-00-9	9.297	Flammable liquid, category 3 H226, Acute toxicity, category 4 H312, Acute toxicity, category 4 H332, Aspiration hazard, category 1 H304, Specific target organ toxicity - repeated exposure, category 2 H373, Eye irritation, category 2B H320, Skin irritation, category 2 H315, Specific target organ toxicity - single exposure, category 3 H335
EC 215-535-7		
CAS 1330-20-7		
REACH Reg. 01-2119488216-32-xxxx		
ISO-BUTANOL		
INDEX 603-108-00-1	8.75	Flammable liquid, category 3 H226, Serious eye damage, category 1 H318, Skin irritation, category 2 H315, Specific target organ toxicity - single exposure, category 3 H335, Specific target organ toxicity - single exposure, category 3 H336

3. Composition/information on ingredients ... / >>

EC 201-148-0
CAS 78-83-1
REACH Reg. 01-2119484609-23-xxxx
N-BUTYL ACETATE
INDEX 607-025-00-1 6.525

Flammable liquid, category 3 H226, Specific target organ toxicity - single exposure, category 3 H336

EC 204-658-1
CAS 123-86-4
REACH Reg. 01-2119485493-29-xxxx
m-XILENE
4.68

Flammable liquid, category 3 H226, Acute toxicity, category 4 H312, Acute toxicity, category 4 H332, Skin irritation, category 2 H315

EC 203-576-3
CAS 108-38-3
BUTAN-1-OL
INDEX 603-004-00-6 3

Flammable liquid, category 3 H226, Acute toxicity, category 4 H302, Serious eye damage, category 1 H318, Skin irritation, category 2 H315, Specific target organ toxicity - single exposure, category 3 H335, Specific target organ toxicity - single exposure, category 3 H336

EC 200-751-6
CAS 71-36-3
REACH Reg. 01-2119484630-38-xxxx

MASS REACTION BETWEEN METHYLBENZENE AND XYLEN
2.72

Flammable liquid, category 3 H226, Acute toxicity, category 4 H312, Acute toxicity, category 4 H332, Aspiration hazard, category 1 H304, Specific target organ toxicity - repeated exposure, category 2 H373, Eye irritation, category 2 H319, Skin irritation, category 2 H315, Specific target organ toxicity - single exposure, category 3 H335

EC 905-588-0
CAS
REACH Reg. 01-2119539452-40-xxxx
o-XILENE
1.89

Flammable liquid, category 3 H226, Acute toxicity, category 4 H312, Acute toxicity, category 4 H332, Skin irritation, category 2 H315

EC 202-422-2
CAS 95-47-6
ETHYLBENZENE
INDEX 601-023-00-4 1.764

Flammable liquid, category 2 H225, Acute toxicity, category 4 H332, Aspiration hazard, category 1 H304, Specific target organ toxicity - repeated exposure, category 2 H373, Hazardous to the aquatic environment, chronic toxicity, category 3 H412

EC 202-849-4
CAS 100-41-4
REACH Reg. 01-2119489370-35-xxxx

NITROCELLULOSE
INDEX 603-037-00-6 1.539

Explosive, division 1.1 H201

EC 682-719-5
CAS 9004-70-0
REACH Reg. Non disponibile / Not available
p-XILENE
1.08

Flammable liquid, category 3 H226, Acute toxicity, category 4 H312, Acute toxicity, category 4 H332, Skin irritation, category 2 H315

EC 203-396-5
CAS 106-42-3
TOLUENE
INDEX 601-021-00-3 1

Flammable liquid, category 2 H225, Reproductive toxicity, category 2 H361, Aspiration hazard, category 1 H304, Specific target organ toxicity - repeated exposure, category 2 H373, Skin irritation, category 2 H315, Specific target organ toxicity - single exposure, category 3 H336, Hazardous to the aquatic environment, chronic toxicity, category 3 H412

EC 203-625-9
CAS 108-88-3
REACH Reg. 01-2119471310-51-xxxx

ETHANOL
INDEX 603-002-00-5 0.48

Flammable liquid, category 2 H225, Carcinogenicity, category 1A H350

EC 200-578-6
CAS 64-17-5
REACH Reg. 01-2119457610-43-0050

3. Composition/information on ingredients ... / >>

FORMALDEHYDE

INDEX 605-001-00-5 0.123

Flammable liquid, category 4 H227, Carcinogenicity, category 1A H350, Germ cell mutagenicity, category 2 H341, Acute toxicity, category 2 H330, Acute toxicity, category 3 H301, Acute toxicity, category 3 H311, Skin corrosion, category 1B H314, Serious eye damage, category 1 H318, Specific target organ toxicity - single exposure, category 3 H335, Skin sensitization, category 1 H317

EC 200-001-8

CAS 50-00-0

REACH Reg. Non disponibile / Not available

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

4. First-aid measures

4.1. Description of first aid measures

In case of doubt or in the presence of symptoms contact a doctor and show him this document.

In case of more severe symptoms, ask for immediate medical aid.

EYES: Remove, if present, contact lenses if the situation allows you to do so easily. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. Get medical advice/attention.

SKIN: Take off immediately all contaminated clothing. Wash immediately and thoroughly with running water (and soap if possible). Get medical advice/attention. Avoid further contact with contaminated clothing.

INGESTION: Do not induce vomiting unless explicitly authorised by a doctor. Do not give anything by mouth to an unconscious person. Get medical advice/attention.

INHALATION: Remove victim to fresh air, away from the accident scene. In the event of respiratory symptoms (coughing, wheezing, breathing difficulty, asthma) keep the victim in a comfortable position for breathing. If necessary administer oxygen. If the subject stops breathing, administer artificial respiration. Get medical advice/attention.

Rescuer protection

It is good practice for rescuers lending support to a person who has been exposed to a chemical substance or to a mixture to wear personal protective equipment. The nature of such protection depends on the hazard level of the substance or mixture, on the type of exposure and on the extent of the contamination. In the absence of other more specific indications, use of disposable gloves in the event of possible contact with body fluids is recommended. For the type of PPE suitable for the characteristics of the substance or mixture, see section 8.

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

Specific information on symptoms and effects caused by the product are unknown.

DELAYED EFFECTS: Based on the information currently available, there are no known cases of delayed effects following exposure to this product.

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

If symptoms occur, whether acute or delayed, consult a doctor.

Means to have available in the workplace for specific and immediate treatment

Running water for skin and eye wash.

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 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).

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. 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. When performing transfer operations involving large containers, connect to an earthing system and wear antistatic footwear. Vigorous stirring and flow through the tubes and equipment may cause the formation and accumulation of electrostatic charges. In order to avoid the risk of fires and explosions, never use compressed air when handling. Open containers with caution as they may be pressurised. Do not eat, drink or smoke during use. Avoid leakage of the product into the environment.

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. Store in a cool and 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

8. Exposure controls/personal protection**8.1. Control parameters**

Regulatory references:

USA	NIOSH-REL	NIOSH publication No. 2005-149, 3th printing, 2007.
USA	OSHA-PEL	Occupational Exposure Limits - Limits for Air Contaminants TABLE Z-1-1910.1000.
USA	CAL/OSHA-PEL	California Division of Occupational Safety and Health (Cal-OSHA) Permissible Exposure Limits (PELs).
EU	OEL EU	Directive (EU) 2022/431; Directive (EU) 2019/1831; Directive (EU) 2019/130; Directive (EU) 2019/983; Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 98/24/EC; Directive 91/322/EEC.

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

TLV-ACGIH

ACGIH 2025

p-XILENE

Threshold Limit Value

Type	Country	TWA/8h	STEL/15min	Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm
OSHA-PEL	USA	435	100		
NIOSH	USA	435	100	655	150

m-XILENE

Threshold Limit Value

Type	Country	TWA/8h	STEL/15min	Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm
OSHA-PEL	USA	435	100		
NIOSH	USA	435	100	655	150

o-XILENE

Threshold Limit Value

Type	Country	TWA/8h	STEL/15min	Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm
OSHA-PEL	USA	435	100		
NIOSH	USA	435	100	655	150

XYLENE

Threshold Limit Value

Type	Country	TWA/8h	STEL/15min	Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm
ACGIH	-		20		
OEL	EU	221	50	442	100
OSHA	USA	435	100		
CAL/OSHA	USA	435	100	655	150
NIOSH	USA	435	100	655	150

ISO-BUTANOL

Threshold Limit Value

Type	Country	TWA/8h	STEL/15min	Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm
ACGIH	-	152	50		
OSHA	USA	300	100		
CAL/OSHA	USA	150	50		
NIOSH	USA	150	50		

TOLUENE

Threshold Limit Value

Type	Country	TWA/8h	STEL/15min	Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm
OEL	EU	192	50	384	100
ACGIH	-		20		
OSHA	USA		200		300
CAL/OSHA	USA	37	10	560	150
NIOSH	USA	375	100	560	150

ETHYLBENZENE

Threshold Limit Value

Type	Country	TWA/8h	STEL/15min	Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm
OEL	EU	442	100	884	200
ACGIH	-	87	20		
OSHA	USA	435	100		
CAL/OSHA	USA	435	100	545	125
NIOSH	USA	435	100	545	125

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

ETHANOL

Threshold Limit Value

Type	Country	TWA/8h	STEL/15min	Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm
ACGIH	-			1884	1000
OSHA	USA	1900	1000		
CAL/OSHA	USA	1900	1000		
NIOSH	USA	1900	1000		

BUTAN-1-OL

Threshold Limit Value

Type	Country	TWA/8h	STEL/15min	Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm
ACGIH	-	61	20		
OSHA	USA	300	100		
CAL/OSHA	USA			150 (C)	50 (C)
NIOSH	USA			150 (C)	50 (C)

FORMALDEHYDE

Threshold Limit Value

Type	Country	TWA/8h	STEL/15min	Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm
OEL	EU	0.37	0.3	0.74	0.6
ACGIH	-		0.1		0.3
OSHA	USA		0.75		2
CAL/OSHA	USA		0.75		2
NIOSH	USA		0.016		0.1 (C)

ETHYL ACETATE

Threshold Limit Value

Type	Country	TWA/8h	STEL/15min	Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm
OEL	EU	734	200	1468	400
ACGIH	-	1441	400		
OSHA	USA	1400	400		
CAL/OSHA	USA	1400	400		
NIOSH	USA	1400	400		

N-BUTYL ACETATE

Threshold Limit Value

Type	Country	TWA/8h	STEL/15min	Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm
OEL	EU	241	50	723	150
ACGIH	-		50		150
OSHA	USA	710	150		
CAL/OSHA	USA	710	150	950	200
NIOSH	USA	710	150	950	200

Legend:

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

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. Personal protective equipment must comply with current regulations.

HAND PROTECTION

Protect hands with category III work gloves.

The following should be considered when choosing work glove material (OSHA 29 CFR 1910.138): compatibility, degradation, permeability time.

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 I professional long-sleeved overalls and safety footwear. Wash body with soap and water after removing protective clothing.

EYE PROTECTION

Wear airtight protective goggles (OSHA 29 CFR 1910.133).

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

RESPIRATORY PROTECTION

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, wear a mask with a NIOSH certified filter, whose limit of use will be defined by the manufacturer (NIOSH 42 CFR 84, OSHA 29 CFR 1910.134). 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 or external air-intake breathing apparatus. For a correct choice of respiratory protection device, see standard NIOSH 42 CFR 84, OSHA 29 CFR 1910.134.

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

Properties	Value	Information
Appearance	dense liquid	
Colour	colourless	
Odour	pungent	
Odour threshold	not available	
pH	not available	Reason for missing data:substance/mixture is non-polar/aprotic (eg: an organic solvent mixture)
Melting point / freezing point	not available	
Initial boiling point	> 35 °C (95 °F)	
Boiling range	not available	
Flash point	< 23 °C (73,4 °F)	
Evaporation rate	not available	
Flammability	not available	
Lower explosive limit	not available	
Upper explosive limit	not available	
Vapour pressure	not available	
Vapour density	not available	
Relative density	0.95 Kg/l	
Solubility	insoluble in water	
Partition coefficient: n-octanol/water	not available	
Auto-ignition temperature	not available	
Decomposition temperature	not available	
Viscosity	> 20,5 mm ² /s	Temperature: 20 °C
Explosive properties	not applicable	
Oxidising properties	not applicable	

9.2. Other information

Total solids (250°C / 482°F)	33,92 %
VOC :	66,03 % - 627,31 g/litre

10. Stability and reactivity

10.1. Reactivity

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

TOLUENE

Avoid exposure to: light.

BUTAN-1-OL

Attacks various types of plastic materials.

NITROCELLULOSE

Avoid exposure to: heat,naked flames.Avoid contact with: strong oxidants.Fire hazard.Decomposes under the effect of heat.

FORMALDEHYDE

Decomposes under the effect of heat.

Acqueous solutions are stabilised with methanol but tend to polymerise over time.

ETHYL ACETATE

10. Stability and reactivity ... / >>

Decomposes slowly into acetic acid and ethanol under the effect of light, air and water.

N-BUTYL ACETATE

Decomposes on contact with: water.

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

Stable in normal conditions of use and storage. Reacts violently with: strong oxidants, strong acids, nitric acid, perchlorates. May form explosive mixtures with: air.

TOLUENE

Risk of explosion on contact with: fuming sulphuric acid, nitric acid, silver perchlorate, nitrogen dioxide, non-metal halogenates, acetic acid, organic nitrocompounds. May form explosive mixtures with: air. May react dangerously with: strong oxidising agents, strong acids, sulphur.

ETHYLBENZENE

Reacts violently with: strong oxidants. Attacks various types of plastic materials. May form explosive mixtures with: air.

ETHANOL

Risk of explosion on contact with: alkaline metals, alkaline oxides, calcium hypochlorite, sulphur monofluoride, acetic anhydride, acids, concentrated hydrogen peroxide, perchlorates, perchloric acid, perchloronitrile, mercury nitrate, nitric acid, silver, silver nitrate, ammonia, silver oxide, ammonia, strong oxidising agents, nitrogen dioxide. May react dangerously with: bromoacetylene, chlorine acetylene, bromine trifluoride, chromium trioxide, chromyl chloride, fluorine, potassium tert-butoxide, lithium hydride, phosphorus trioxide, black platinum, zirconium (IV) chloride, zirconium (IV) iodide. Forms explosive mixtures with: air.

BUTAN-1-OL

Reacts violently developing heat on contact with: aluminium, strong oxidising agents, strong reducing agents, hydrochloric acid. Forms explosive mixtures with: air.

NITROCELLULOSE

Avoid exposure to: heat, shocks. Possibility of explosion.

FORMALDEHYDE

Risk of explosion on contact with: nitromethane, nitrogen dioxide, hydrogen peroxide, phenols, performic acid, nitric acid. May polymerise on contact with: strong oxidising agents, alkalis. May react dangerously with: hydrochloric acid, magnesium carbonate, sodium hydroxide, perchloric acid, aniline. Forms explosive mixtures with: air.

ETHYL ACETATE

Risk of explosion on contact with: alkaline metals, hydrides, oleum. May react violently with: fluorine, strong oxidising agents, chlorosulphuric acid, potassium tert-butoxide. Forms explosive mixtures with: air.

N-BUTYL ACETATE

Risk of explosion on contact with: strong oxidising agents. May react dangerously with: alkaline hydroxides, potassium tert-butoxide. Forms explosive mixtures with: air.

10.4. Conditions to avoid

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

ETHANOL

Avoid exposure to: sources of heat, naked flames.

BUTAN-1-OL

Avoid exposure to: sources of heat, naked flames.

FORMALDEHYDE

Avoid exposure to: light, sources of heat, naked flames.

ETHYL ACETATE

Avoid exposure to: light, sources of heat, naked flames.

N-BUTYL ACETATE

Avoid exposure to: moisture, sources of heat, naked flames.

10.5. Incompatible materials

FORMALDEHYDE

Incompatible with: acids, alkalis, ammonia, tannin, strong oxidants, phenols, copper salts, silver, iron.

ETHYL ACETATE

Incompatible with: acids, bases, strong oxidants, chlorosulphuric acid.

N-BUTYL ACETATE

Incompatible with: water, nitrates, strong oxidants, acids, alkalis, zinc.

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.

ETHYLBENZENE

10. Stability and reactivity ... / >>

May develop: methane, styrene, hydrogen, ethane.
NITROCELLULOSE
May develop: nitric oxide.
FORMALDEHYDE
When heated to decomposition releases: methanol, carbon monoxide.

11. Toxicological information

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.

11.1. Information on toxicological effectsMetabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

XYLENE
WORKERS: inhalation; contact with the skin.
POPULATION: ingestion of contaminated food or water; inhalation of ambient air.

N-BUTYL ACETATE
WORKERS: inhalation; contact with the skin.

ETHYLBENZENE
WORKERS: inhalation; contact with the skin.
POPULATION: ingestion of contaminated food or water; contact with the skin of products containing the substance.

TOLUENE
WORKERS: inhalation; contact with the skin.
POPULATION: ingestion of contaminated food or water; inhalation of ambient air; contact with the skin of products containing the substance.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

XYLENE
Toxic effect on the central nervous system (encephalopathy); irritating for the skin, conjunctiva, cornea and respiratory apparatus.

N-BUTYL ACETATE
In humans, the substance's vapours cause irritation of the eyes and nose. In the event of repeated exposure, skin irritation, dermatitis (dryness and cracking of the skin) and keratitis appear.

ETHYLBENZENE
As the counterparts of benzene, may have an acute effect on the central nervous system, with depression, narcosis, often preceded by dizziness and associated with headache (Ispesi). Is irritating for skin, conjunctiva and respiratory tract.

TOLUENE
Toxic effect on the central and peripheral nervous system with encephalopathy and polyneuritis; irritating for the skin, conjunctiva, cornea and respiratory apparatus.

Interactive effects

XYLENE
Intake of alcohol interferes with the metabolism of the substance, inhibiting it. Ethanol consumption (0.8 g/kg) before a 4-hour exposure to xylene vapours (145 and 280 ppm) causes a 50% reduction in the excretion of methyl hippuric acid, whereas the concentration of xylenes in the blood increases approx. 1.5-2 times. At the same time there is an increase in the secondary side effects of the ethanol. The metabolism of the xylenes is increased by phenobarbital and 3-methyl-colantrene type enzyme inducers. Aspirin and xylenes mutually inhibit their conjugation with the glycine, which results in a decrease in urinary excretion of methyl hippuric acid. Other industrial products can interfere with the metabolism of xylenes.

N-BUTYL ACETATE
A case of acute intoxication been reported involving a 33 year old worker while cleaning a tank with a preparation containing xylenes, butyl acetate and ethylene glycol acetate. The person had irritation of the conjunctiva and upper respiratory tract, drowsiness and motor coordination disorders, which disappeared within 5 hours. The symptoms are attributed to poisoning by mixed xylenes and butyl acetate, with a possible synergistic effect responsible for the neurological effects. Cases of vacuolar keratitis are reported in workers exposed to a mixture of butyl acetate and isobutanol vapours, but with uncertainty concerning the responsibility of a particular solvent (INRC, 2011).

11. Toxicological information ... / >>

TOLUENE

Certain drugs and other industrial products can interfere with the metabolism of the toluene.

ACUTE TOXICITY

XYLENE

LD50 (Oral): 3523 mg/kg Rat
 LD50 (Dermal): 4350 mg/kg Rabbit
 LC50 (Inhalation vapours): 26 mg/l/4h Rat

ISO-BUTANOL

LD50 (Oral): 2460 mg/kg Rat
 LD50 (Dermal): 2460 mg/kg Rabbit
 LC50 (Inhalation vapours): 19.2 mg/l/4h Rat

N-BUTYL ACETATE

LD50 (Oral): > 6400 mg/kg Rat
 LD50 (Dermal): > 5000 mg/kg Rabbit
 LC50 (Inhalation vapours): 21.1 mg/l/4h Rat

m-XILENE

LD50 (Oral): > 3523 mg/kg be 3 523 - 6 631 mg/kg bw (rat)
 LD50 (Dermal): 12126 mg/kg bw Practically nontoxic
 LC50 (Inhalation vapours): > 5922 ppm (4 h) 5 922 - 6 700 ppm (rat)

BUTAN-1-OL

LD50 (Oral): 790 mg/kg Rat
 LD50 (Dermal): 3400 mg/kg Rabbit
 LC50 (Inhalation vapours): 8000 ppm/4h Rat

MASS REACTION BETWEEN METHYLBENZENE AND XYLENE

LD50 (Oral): > 3523 mg/kg 3 523 - 4 000 mg/kg bw (Rat)
 LD50 (Dermal): 12126 mg/kg bw Rabbit
 LC50 (Inhalation vapours): > 6350 ppm 6 350 - 6 700 ppm (Rat)

o-XILENE

LD50 (Oral): > 5251 mg/kg bw 3 523 - 6 631 mg/kg bw (rat)
 LD50 (Dermal): 12126 mg/kg bw (rabbit)
 LC50 (Inhalation vapours): > 5922 ppm (4 h) 5 922 - 6 700 ppm (rat)

ETHYLBENZENE

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

NITROCELLULOSE

LD50 (Oral): > 5000 mg/kg Rat

p-XILENE

LD50 (Oral): > 3523 mg/kg 3 523 - 6 631 mg/kg bw (rat)
 LD50 (Dermal): 12126 mg/kg bw (rabbit)
 LC50 (Inhalation vapours): > 5922 ppm (4 h) 5 922 - 6 700 ppm (rat)

TOLUENE

LD50 (Oral): 5580 mg/kg Rat
 LD50 (Dermal): 12124 mg/kg Rabbit
 LC50 (Inhalation vapours): 28.1 mg/l/4h Rat

TRIBUTYL O-ACETYLCITRATE

LD50 (Oral): 31500 mg/kg bw (Rat)
 LD50 (Dermal): 1000 mg/kg bw (Rabbit)

ETHANOL

LD50 (Oral): > 5000 mg/kg Rat
 LC50 (Inhalation vapours): 117 mg/l/4h Rat

11. Toxicological information ... / >>

FORMALDEHYDE	
LD50 (Oral):	100 mg/kg Rat
LD50 (Dermal):	270 mg/kg Rabbit
LC50 (Inhalation vapours):	0.588 mg/l/4h Rat

SKIN CORROSION / IRRITATION

Causes skin irritation
 Repeated exposure may cause skin dryness or cracking.

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

May cause cancer

Carcinogenicity Assessment:

1330-20-7	XYLENE
	ACGIH:: A4
	IARC:3
100-41-4	ETHYLBENZENE
	ACGIH:: A3
	IARC:2B
7631-86-9	AMORPHOUS SILICATE HYDRATE
	IARC:3
108-88-3	TOLUENE
	ACGIH:: A4
	IARC:3
64-17-5	ETHANOL
	ACGIH:: A3
	IARC:1
50-00-0	FORMALDEHYDE
	ACGIH:: A1
	IARC:1
	NTP: Known

XYLENE

Classified in Group 3 (not classifiable as a human carcinogen) by the International Agency for Research on Cancer (IARC).
 The US Environmental Protection Agency (EPA) affirms that "the data is inadequate for an assessment of the carcinogenic potential".

ETHYLBENZENE

Classified in Group 2B (possible human carcinogen) by the International Agency for Research on Cancer (IARC) - (IARC, 2000).
 Classified in Group D (not classifiable as a human carcinogen) by the US Environmental Protection Agency (EPA) - (US EPA file on-line 2014).

TOLUENE

Classified in Group 3 (not classifiable as a human carcinogen) by the International Agency for Research on Cancer (IARC) - (IARC, 1999).
 The US Environmental Protection Agency (EPA) affirms that "the data is inadequate for an assessment of the carcinogenic potential".

REPRODUCTIVE TOXICITY

Suspected of damaging fertility or the unborn child

STOT - SINGLE EXPOSURE

May cause respiratory irritation
 May cause drowsiness or dizziness

11. Toxicological information ... / >>

STOT - REPEATED EXPOSURE

May cause damage to organs

ASPIRATION HAZARD

Toxic for aspiration

12. Ecological information

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

12.1. Toxicity

m-XILENE

EC50 - for Crustacea

10.389 mg/l/48h

EC50 - for Algae / Aquatic Plants

> 4.667 mg/l/72h 4,667 - 5,921 mg/L

MASS REACTION BETWEEN METHYLBENZENE AND XYLEN

LC50 - for Fish

> 26 mg/l/96h 2,6 - 8,4 mg/L

EC50 - for Crustacea

> 1 mg/l/48h 1 - 4,7 mg/L

EC50 - for Algae / Aquatic Plants

> 2.2 mg/l/72h 2,2 - 4,36 mg/L

Chronic NOEC for Fish

1.3 mg/l 56 days

o-XILENE

LC50 - for Fish

> 2.6 mg/l/96h 2,6 - 8,4 mg/L

EC50 - for Crustacea

10.389 mg/l/48h

p-XILENE

LC50 - for Fish

> 2.6 mg/l/96h 2,6 - 8,4 mg/L

EC50 - for Crustacea

10.389 mg/l/48h

TRIBUTYL O-ACETYLCITRATE

LC50 - for Fish

3.6 mg/l

EC50 - for Crustacea

7.82 mg/l

EC50 - for Algae / Aquatic Plants

3 mg/l

12.2. Persistence and degradability

ETHYL ACETATE

Solubility in water

> 10000 mg/l

Rapidly degradable

XYLENE

Solubility in water

100 - 1000 mg/l

Rapidly degradable

ISO-BUTANOL

Solubility in water

1000 - 10000 mg/l

Rapidly degradable

N-BUTYL ACETATE

Solubility in water

1000 - 10000 mg/l

BUTAN-1-OL

Solubility in water

1000 - 10000 mg/l

Rapidly degradable

ETHYLBENZENE

Solubility in water

1000 - 10000 mg/l

Rapidly degradable

12. Ecological information ... / >>

TOLUENE	
Solubility in water	100 - 1000 mg/l
Rapidly degradable	
ETHANOL	
Solubility in water	1000 - 10000 mg/l
Rapidly degradable	
FORMALDEHYDE	
Solubility in water	55000 mg/l
Rapidly degradable	

12.3. Bioaccumulative potential

ETHYL ACETATE	
Partition coefficient: n-octanol/water	0.68
BCF	30
XYLENE	
Partition coefficient: n-octanol/water	3.12
BCF	25.9
ISO-BUTANOL	
Partition coefficient: n-octanol/water	1
N-BUTYL ACETATE	
Partition coefficient: n-octanol/water	2.3
BCF	15.3
BUTAN-1-OL	
Partition coefficient: n-octanol/water	1
BCF	3.16
ETHYLBENZENE	
Partition coefficient: n-octanol/water	3.6
TOLUENE	
Partition coefficient: n-octanol/water	2.73
BCF	90
ETHANOL	
Partition coefficient: n-octanol/water	-0.35
FORMALDEHYDE	
Partition coefficient: n-octanol/water	0.35
BCF	< 1

12.4. Mobility in soil

XYLENE	
Partition coefficient: soil/water	2.73
ISO-BUTANOL	
Partition coefficient: soil/water	0.31
N-BUTYL ACETATE	
Partition coefficient: soil/water	< 3
BUTAN-1-OL	
Partition coefficient: soil/water	0.388
FORMALDEHYDE	
Partition coefficient: soil/water	1.202

12.5. Results of PBT and vPvB assessment

12. Ecological information ... / >>

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

12.6. Other adverse effects

Information not available

13. Disposal considerations

13.1. Waste treatment methods

Reuse, when possible. Neat product residues should be considered special non-hazardous waste.
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.
The management of waste arising from the use or dispersal of this product must be organised in accordance with occupational safety regulations. See section 8 for possible need for PPE.
CONTAMINATED PACKAGING
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

14. Transport information

Classification according to the UN model on transport of dangerous goods.

14.1. UN number

ADR / RID, IMDG, IATA: UN 1263

14.2. UN proper shipping name

ADR / RID: PAINT
IMDG: PAINT
IATA: PAINT

14.3. Transport hazard class(es)

ADR / RID: Class: 3 Label: 3

IMDG: Class: 3 Label: 3

IATA: Class: 3 Label: 3



14.4. Packing group

ADR / RID, IMDG, IATA: II

14.5. Environmental hazards

ADR / RID: NO
IMDG: not marine pollutant
IATA: NO

14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 33	Limited Quantities: 5 lt	Tunnel restriction code: (D/E)
	Special provision: 163, 367, 640C, 650		
IMDG:	EMS: F-E, S-E	Limited Quantities: 5 lt	Packaging instructions: 364
IATA:	Cargo:	Maximum quantity: 60 L	Packaging instructions: 353
	Passengers:	Maximum quantity: 5 L	
	Special provision:	A3, A72, A192	

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Information not relevant

15. Regulatory information

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

U.S. Federal Regulations

TSCA:

All components of this product are listed on US Toxic Substances Control Act (TSCA) Inventory or are exempt from the listing / notification requirements.

Clean Air Act Section 112(b):

106-42-3	p-XILENE
108-38-3	m-XILENE
95-47-6	o-XILENE
1330-20-7	XYLENE
108-88-3	TOLUENE
100-41-4	ETHYLBENZENE
50-00-0	FORMALDEHYDE

Clean Air Act Section 602 Class I Substances:

No component(s) listed.

Clean Air Act Section 602 Class II Substances:

No component(s) listed.

Clean Water Act – Priority Pollutants:

108-88-3	TOLUENE
100-41-4	ETHYLBENZENE

Clean Water Act – Toxic Pollutants:

108-88-3	TOLUENE
100-41-4	ETHYLBENZENE

DEA List I Chemicals (Precursor Chemicals):

No component(s) listed.

DEA List II Chemicals (Essential Chemicals):

108-88-3	TOLUENE
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EPA List of Lists:

313 Category Code:

106-42-3	p-XILENE
108-38-3	m-XILENE
95-47-6	o-XILENE
1330-20-7	XYLENE
108-88-3	TOLUENE
100-41-4	ETHYLBENZENE
71-36-3	BUTAN-1-OL
50-00-0	FORMALDEHYDE

EPCRA 302 EHS TPQ:

50-00-0	FORMALDEHYDE
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EPCRA 304 EHS RQ:

50-00-0	FORMALDEHYDE
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CERCLA RQ:

106-42-3	p-XILENE
108-38-3	m-XILENE
95-47-6	o-XILENE
1330-20-7	XYLENE
78-83-1	ISO-BUTANOL
108-88-3	TOLUENE
100-41-4	ETHYLBENZENE
71-36-3	BUTAN-1-OL

15. Regulatory information ... / >>

50-00-0	FORMALDEHYDE
141-78-6	ETHYL ACETATE
123-86-4	N-BUTYL ACETATE

EPCRA 313 TRI:

106-42-3	p-XILENE
108-38-3	m-XILENE
95-47-6	o-XILENE
1330-20-7	XYLENE
108-88-3	TOLUENE
100-41-4	ETHYLBENZENE
71-36-3	BUTAN-1-OL
50-00-0	FORMALDEHYDE

RCRA Code:

106-42-3	p-XILENE
108-38-3	m-XILENE
95-47-6	o-XILENE
1330-20-7	XYLENE
78-83-1	ISO-BUTANOL
108-88-3	TOLUENE
71-36-3	BUTAN-1-OL
50-00-0	FORMALDEHYDE
141-78-6	ETHYL ACETATE

CAA 112 (r) RMP TQ:

50-00-0	FORMALDEHYDE
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State Regulations

Massachusetts:

106-42-3	p-XILENE
108-38-3	m-XILENE
95-47-6	o-XILENE
1330-20-7	XYLENE
7631-86-9	AMORPHOUS SILICATE HYDRATE
78-83-1	ISO-BUTANOL
108-88-3	TOLUENE
100-41-4	ETHYLBENZENE
64-17-5	ETHANOL
71-36-3	BUTAN-1-OL
9004-70-0	NITROCELLULOSE
50-00-0	FORMALDEHYDE
141-78-6	ETHYL ACETATE
123-86-4	N-BUTYL ACETATE

Minnesota:

1330-20-7	XYLENE
7631-86-9	AMORPHOUS SILICATE HYDRATE
78-83-1	ISO-BUTANOL
108-88-3	TOLUENE
100-41-4	ETHYLBENZENE
64-17-5	ETHANOL
71-36-3	BUTAN-1-OL
50-00-0	FORMALDEHYDE
141-78-6	ETHYL ACETATE
123-86-4	N-BUTYL ACETATE

New Jersey:

106-42-3	p-XILENE
108-38-3	m-XILENE
95-47-6	o-XILENE
1330-20-7	XYLENE
78-83-1	ISO-BUTANOL
108-88-3	TOLUENE
100-41-4	ETHYLBENZENE
64-17-5	ETHANOL
71-36-3	BUTAN-1-OL
9004-70-0	NITROCELLULOSE

15. Regulatory information ... / >>

50-00-0 FORMALDEHYDE
141-78-6 ETHYL ACETATE
123-86-4 N-BUTYL ACETATE

New York:

106-42-3 p-XILENE
108-38-3 m-XILENE
95-47-6 o-XILENE
1330-20-7 XYLENE
78-83-1 ISO-BUTANOL
108-88-3 TOLUENE
100-41-4 ETHYLBENZENE
71-36-3 BUTAN-1-OL
50-00-0 FORMALDEHYDE
141-78-6 ETHYL ACETATE
123-86-4 N-BUTYL ACETATE

Pennsylvania:

106-42-3 p-XILENE
108-38-3 m-XILENE
95-47-6 o-XILENE
1330-20-7 XYLENE
7631-86-9 AMORPHOUS SILICATE HYDRATE
78-83-1 ISO-BUTANOL
108-88-3 TOLUENE
100-41-4 ETHYLBENZENE
64-17-5 ETHANOL
71-36-3 BUTAN-1-OL
9004-70-0 NITROCELLULOSE
50-00-0 FORMALDEHYDE
141-78-6 ETHYL ACETATE
123-86-4 N-BUTYL ACETATE

California:

106-42-3 p-XILENE
108-38-3 m-XILENE
95-47-6 o-XILENE
1330-20-7 XYLENE
7631-86-9 AMORPHOUS SILICATE HYDRATE
78-83-1 ISO-BUTANOL
108-88-3 TOLUENE
100-41-4 ETHYLBENZENE
64-17-5 ETHANOL
71-36-3 BUTAN-1-OL
50-00-0 FORMALDEHYDE
141-78-6 ETHYL ACETATE
123-86-4 N-BUTYL ACETATE

Proposition 65:

WARNING! This product contains chemicals known to the State of California to cause cancer and birth defects or reproductive harm.

108-88-3 TOLUENE

Hazard type	NSRL / MADL (µg/day)	Oral	Dermal	Inhalation	Intravenous	Note
Development toxicity	7000					-

100-41-4 ETHYLBENZENE

Hazard type	NSRL / MADL (µg/day)	Oral	Dermal	Inhalation	Intravenous	Note
Carcinogenicity	41			54		-

50-00-0 FORMALDEHYDE

Hazard type	NSRL / MADL (µg/day)	Oral	Dermal	Inhalation	Intravenous	Note
Carcinogenicity	40					-

International Regulations

Substances subject to exportation reporting pursuant to Regulation (EU) 649/2012:

None

15. Regulatory information ... / >>

Substances subject to the Rotterdam Convention:
None

Substances subject to the Stockholm Convention:
None

16. Other information

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

H201	Explosive; mass explosion hazard.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H227	Combustible liquid.
H350	May cause cancer.
H341	Suspected of causing genetic defects.
H361	Suspected of damaging fertility or the unborn child.
H330	Fatal if inhaled.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H304	May be fatal if swallowed and enters airways.
H373	May cause damage to organs through prolonged or repeated exposure.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H320	Cause eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H317	May cause an allergic skin reaction.
H336	May cause drowsiness or dizziness.
H412	Harmful to aquatic life with long lasting effects.

LEGEND:

- 313 CATEGORY CODE: Emergency Planning and Community Right-to Know Act Section 313 Category Code
- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAA 112 ® RMP TQ: Risk Management Plan Threshold Quantity (Clean Air Act Section 112®)
- CAS: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CERCLA RQ: Reportable Quantity (Comprehensive Environment Response, Compensation, and Liability Act)
- CLP: Regulation (EC) 1272/2008
- DEA: Drug Enforcement Administration
- EmS: Emergency Schedule
- EPA: US Environmental Protection Agency
- EPCRA: Emergency Planning and Community Right-to Know Act
- EPCRA 302 EHS TPQ: Extremely Hazardous Substance Threshold Planning Quantity (Section 302 Category Code)
- EPCRA 304 EHS RQ: Extremely Hazardous Substance Reportable Quantity (Section 304 Category Code)
- EPCRA 313 TRI: Toxics Release Inventory (Section 313 Category Code)
- 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
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PEL: Predicted exposure level
- RCRA Code: Resource Conservation and Recovery Act Code
- REACH: Regulation (EC) 1907/2006
- REL: Recommended exposure limit
- 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.
- TSCA: Toxic Substances Control Act
- TWA: Time-weighted average exposure limit
- TWA STEL: Short-term exposure limit

16. Other information ... / >>

- VOC: Volatile organic Compounds
- WHMIS: Workplace Hazardous Materials Information System.

GENERAL BIBLIOGRAPHY:

- GHS rev. 3
- The Merck Index. 10th Edition
- Handling Chemical Safety
- Niosh - Registry of Toxic Effects of Chemical Substances
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy
- 6 NYCRR part 597
- Cal/OSHA website
- California Safe Drinking Water and Toxic Enforcement Act
- EPA website
- Hazard Communication Standard (HCS 2012)
- IARC website
- List Of Lists EPA: Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112® of the Clean Air Act
- Massachusetts 105 CMR Department of public health 670.000: "Right to Know"
- Minensota Chapter 5206 Departemnt Of Labor and Industry Hazardous Substances, Employee "Right to Know".
- New Jersey Worker and Community Right to know Act N.J.S.A.
- NTP. 2011. Report on Carcinogens, 12th Edition.
- OSHA website
- Pennsylvania, Hazardous Substance List, Chapter 323

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.

CALCULATION METHODS FOR CLASSIFICATION

Product classification derives from criteria established by the OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200), unless determined otherwise in Section 11 and 12. The data for evaluation of chemical-physical properties are reported in section 9.

Changes to previous review:

The following sections were modified:

02 / 03 / 09 / 11 / 14.