

Safety Data Sheet

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

1.1. Product identifier

Code:	TC43335
Product name	SULPHURIC ACID 35% w/w (1:3 v/v)
INDEX number	016-020-00-8
EC number	231-639-5
CAS number	7664-93-9
Registration Number	01-2119458838-20-XXXX

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

Intended use	Laboratory reagent
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1.3. Details of the supplier of the safety data sheet

Name	TITOLCHIMICA SPA
Full address	VIA S.PIETRO MARTIRE 1054
District and Country	45030 PONTECCHIO POLESINE (RO)
	ITALIA
	Tel. +39425492644
	Fax +39425492909

e-mail address of the competent person
responsible for the Safety Data Sheet

utecnico@titolchimica.it

1.4. Emergency telephone number

For urgent inquiries refer to

Poison control center (24/24h) available to the public: Regional Medicines and Poisons Information Centre NI emergency phone 844 892 0111

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 (EU) Regulation 2015/830. Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

Skin corrosion, category 1A	H314	Causes severe skin burns and eye damage.
Serious eye damage, category 1	H318	Causes serious eye damage.
Classification note according to Annex VI to the CLP Regulation: B		

2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:



Signal words: **Danger**

TC43335 - SULPHURIC ACID 35% w/w (1:3 v/v)
Hazard statements:

H314 Causes severe skin burns and eye damage.

Precautionary statements:

P264 Wash hands thoroughly after handling.
P280 Wear protective gloves/ protective clothing / eye protection / face protection.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER / doctor.

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

2.3. Other hazards

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

SECTION 3. Composition/information on ingredients
3.1. Substances

Contains:

Identification	Conc. %	Classification 1272/2008 (CLP)
SULPHURIC ACID ...%		
CAS 7664-93-9	35	Skin Corr. 1A H314, Eye Dam. 1 H318, Classification note according to Annex VI to the CLP Regulation: B
EC 231-639-5		
INDEX 016-020-00-8		
Reg. no. 01-2119458838-20-XXXX		

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

3.2. Mixtures

Information not relevant

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 due to the contained substances, see chap. 11.

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

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Information not available.

SECTION 5. Firefighting measures

5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT

Choose the most appropriate extinguishing equipment for the specific case.

UNSUITABLE EXTINGUISHING EQUIPMENT

None in particular.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

The product is neither flammable nor combustible.

5.3. Advice for firefighters

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).

SULPHURIC ACID ...%

In case of uncontrolled spillage or discharge into watercourses you must immediately inform the competent local authorities (e.g. Environmental Agency, AUSL, etc.). Collect (dry) with inert and non-combustible materials, then rinse the area with water. The collected substance must be stored in airtight containers and delivered for disposal according to local regulations.

Protective equipment for firefighters: gas-masks with universal filter or breathing apparatus.

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

Aspirate the leaked product into a suitable container. Evaluate the compatibility of the container to be used with the product, checking section 10. Absorb the remainder with inert absorbent material.

Provide sufficient ventilation of the place affected by the leak. Check for possible incompatibilities for the container material in section 7. Disposal of contaminated material must be carried out in accordance with the provisions of 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.

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

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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:

. Italy		Legislative Decree 9 April 2008, n. 81
Switzerland	TLV	Occupational exposure limit values 2012.
EU	OEL EU	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 91/322/EEC.
	TLV-ACGIH	ACGIH 2012

SULPHURIC ACID ...%
Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
OEL	EU	0,05				
OEL	I	0,05				
TLV	CH	0,1		0,1		
TLV-ACGIH		0,2				
Predicted no-effect concentration - PNEC						
Normal value in fresh water				0,0025	mg/l	
Normal value in marine water				0,002	mg/l	
Health - Derived no-effect level - DNEL / DMEL						
	Effects on consumers			Effects on workers		
Route of exposure	Acute local	Acute systemic	Chronic systemic	Chronic local	Chronic systemic	
Inhalation				0,1 mg/m3	0 mg/m3	0,05 mg/m3
						0 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 III 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.

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10.3. Possibility of hazardous reactions

No hazardous reactions are foreseeable in normal conditions of use and storage.

SULPHURIC ACID ...%

The product reacts with metals with highly flammable hydrogen development. The acid reacts violently with alkalis with heat development, same when water is added.

10.4. Conditions to avoid

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

SULPHURIC ACID ...%

Any use that involves the formation of aerosols or the release of steam above 0.05 mg / m³ where workers are exposed, without using adequate respiratory protection. Any use with risk of splashes on the eyes / skin where workers are exposed, without adequate eye / skin protection.

10.5. Incompatible materials
SULPHURIC ACID ...%

Metals, fuels, alkalis, chlorates, hydrochloric acid.

10.6. Hazardous decomposition products

Information not available.

SECTION 11. Toxicological information

11.1. Information on toxicological effects

In the absence of experimental toxicological data on the product itself, the possible dangers of the product for health have been evaluated on the basis of the properties of the substances contained, according to the criteria provided for by the reference standard for classification. Consider therefore the concentration of the individual hazardous substances mentioned in section 3, to evaluate the toxicological effects deriving from exposure to the product.

The product is corrosive and causes severe burns and vesiculations on the skin, which may also appear after exposure. Burns cause severe burning and pain. In contact with the eyes it causes serious injuries and can cause cornea opacity, iris lesion, irreversible staining of the eye. Possible vapors are caustic for the respiratory system and can cause pulmonary edema, whose symptoms sometimes become manifest only after a few hours.

Symptoms of exposure may include: burning sensation, coughing, asthmatic breathing, laryngitis, shortness of breath, headache, nausea and vomiting. Ingestion may cause burns to the mouth, throat and esophagus; vomiting, diarrhea, edema, swelling of the larynx and subsequent suffocation. Perforation of the gastrointestinal tract may also occur.

The product causes serious eye damage and can cause cornea opacity, iris lesion, irreversible staining of the eye.

Acute effects: contact with eyes causes irritation; symptoms may include: redness, edema, pain and tearing.

Inhalation of vapors may cause moderate irritation of the upper respiratory tract; contact with the skin may cause moderate irritation.

Ingestion can cause health problems, which include abdominal pain with burning, nausea and vomiting.

Metabolism, toxicokinetics, mechanism of action and other information
SULPHURIC ACID ...%

In inhalation exposure, the effects depend on the size of the aerosol particles (which determine the place of storage in the respiratory tract), the humidity of the environment and the respiratory tract (which determines the size of the particles), the respiratory rate and the ability of the respiratory tract and their architecture.

In human respiratory system, produced ammonia can partially neutralize aerosol acidity and modify mucus secretion. Breathing mode affects the deposition of particles.

Whatever the size of the particles, in the presence of breathing with the mouth, the deposited dose is higher in the oropharynx, larynx and upper trachea. Sulfuric acid dissolves rapidly in hydrogen ions and sulfate ions. The latter are incorporated into the body's electrolyte pool, the excess is eliminated by urine. The toxic effects are due to hydrogen ion that locally changes the pH.

Information on likely routes of exposure
SULPHURIC ACID ...%

The main potential exposure routes are inhalation, skin contact and ingestion.

Delayed and immediate effects as well as chronic effects from short and long-term exposure
SULPHURIC ACID ...%

Exposure to vapors or aerosols of substance results in irritation of the eyes, skin and respiratory tract. Gravity is a function of concentration, duration of

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exposure, size of inhaled particles and ambient humidity.

In cases of moderate severity, there is nasal, eye, throat, painful chest tightness, coughing and difficulty in breathing. The main complication is delayed pulmonary edema that may occur within 48 hours of exposure and may be triggered or exacerbated by physical exertion. Infectious complications are frequent.

In the case of massive exposures you can have: bronchospasm, laryngeal edema and acute respiratory failure that can rapidly evolve in shock with death due to cardio-respiratory failure.

Sequelae are chronic respiratory failure that follows a severe intoxication and in relation to injuries such as: obliterative bronchiolitis, emphysema or fibrosis.

Another complication may be hyposmia or anosmia associated with chronic rhinitis.

Ingestion of a concentrated solution causes severe caustic lesions of the digestive tract. There is pharyngeal pain, sternal and epigastric back, dysphagia, hypersialorrhoea and often bloody vomiting. This symptomatology can be associated with respiratory symptoms due to laryngeal edema or inhalation pneumopathy. Tissue necrosis involves hydroelectrolytic disorders, metabolic acidosis, hyperleukocytosis, hemolysis, increased tissue enzymes and sometimes a consumption coagulopathy.

In the first week the possible complications are: a digestive perforation, a digestive haemorrhage, a state of shock and infectious complications. The main long-term complications are the cancer of scar wounds.

Interactive effects

Information not available

ACUTE TOXICITY

LC50 (Inhalation) of the mixture: Not classified (no significant component)

LD50 (Oral) of the mixture: Not classified (no significant component)

LD50 (Dermal) of the mixture: Not classified (no significant component)

Acute oral toxicity LD50 oral rat 2140 mg / kg bw (calculated OECD)

Acute dermal toxicity Not available

Acute inhalation toxicity Sulfuric acid causes severe irritation to the eyes, to the membranes of the mucosa and exposed parts of the skin.

Data on substance in aerosol:

LC50: (rat) 375 mg / m³ LC50 (mouse - 4 hours of exposure): 0.85 mg / L air

LC50 (mouse - 8 hours of exposure): 0.60 mg / L air

LC50 (rabbit - 7 hours of exposure): 1.61 mg / L air

Data on steam substance: LC50: (rat - 2 hours exposure): 0, 51 mg / L air

LC50 (mouse - 2 hours of exposure): 0, 32 mg / L air

Repeated dose toxicity Oral: There are no data available

Cutaneous: There are no data available

Inhalation: Sub-chronic - NOAEC is 150 ppm for rats / mice, 30-90 days, 12-23.5 hours / day;

Chronic - the NOEC is 10 mg / m³ for rats / mice, 6 months, 6 hours / day, 5 days / week.

SKIN CORROSION / IRRITATION

Corrosive for the skin

SULPHURIC ACID ...%

The direct contact of the skin with a concentrated sulfuric acid solution (pH <2) causes caustic lesions so much more severe, the longer the contact time has been prolonged and the concentration is high.

Clinically there is localized erythema, pain and edema to which fluticas, areas of necrosis and ulcers follow if no decontamination is proceeded promptly.

The lesions can be infected and can result in scarring and functional sequelae.

Corrosion of respiratory tracts The concentrated substance, at relevant doses, has caustic power.

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

SULPHURIC ACID ...%

At eye level, the substance causes burns occurring clinically with immediate pain, tear, conjunctival hyperthyroidism, local edema, blepharospasm. The substance, unlike strong bases that spread rapidly in depth, causes rapid necrosis of surface tissues and this limits penetration into deep tissues.

In case of prolonged contact with highly concentrated solutions the lesions affect the iris and the crystalline.

Possible complications are cataracts, glaucoma, corneal opacities, cicatricial eyelids and blindness.

RESPIRATORY OR SKIN SENSITISATION

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Does not meet the classification criteria for this hazard class

Respiratory sensitization

SULPHURIC ACID ...%

Substance inhalation may cause a Brooks syndrome (irritant-induced asthma).

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

SULPHURIC ACID ...%

In vitro yielded negative results in the Ames assay with or without metabolic activation.

Positive responses are reported in other essays, but are considered as a consequence of the pH change produced by the substance.

No in vivo studies are available.

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

SULPHURIC ACID ...%

Sulfuric acid is a strong, highly corrosive acid. The substance only causes local and non-systemic effects. The sulfuric acid rapidly dissociates almost completely in contact with the water, releasing the sulfur ion and the hydrogen ion which combines with the water to form a hydrogen ion. Both ions (sulfur and hydrogenion) are normally present in the human body

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

SULPHURIC ACID ...%

There are no data available, further investigations have been renounced of the typical properties of sulfuric acid.

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

SULPHURIC ACID ...%

Long-term exposures with weak concentrations of sulfuric acid cause dental erosions.

Repeated contacts with weak concentrations of substance solutions may cause contact dermatitis.

In exposed workers, signs of nasal irritation (metaplasia, dysplasia, atypia of the nasal mucosa) and chronic bronchitis are reported.

In animals, repeated exposure to sulfuric acid shows great variability in response depending on the species and the effect studied. However, toxic effects are, in all cases, caused by local irritation, there is no systemic effect. (INRS, 2010).

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

SULPHURIC ACID ...%

Long-term exposures cause dental erosions.

Repeated contact with weak concentrations of substance solutions can cause contact dermatitis.

Signs of nasal irritation (metaplasia, dysplasia, atypia of the nasal mucosa) and chronic bronchitis are reported in exposed workers.

Repeated dose toxicity:

Inhalation: Sub-chronic - NOAEC is 150 ppm for rats / mice, 30-90 days, 12-23.5 hours / day;

Chronic - the NOEC is 10 mg / m³ for rats / mice, 6months, 6 hours / day, 5 days / week.

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

SECTION 12. Ecological information

TC43335 - SULPHURIC ACID 35% w/w (1:3 v/v)
12.1. Toxicity
SULPHURIC ACID

Fish (short term) 96-hour LC50: 16-28 mg / l (pH 3.25-3.5)
 Fish (long term) EC10 / LC10 or NOEC: 0.025 mg / L
 Daphnia magna (short term) 48-hour EC50:> 100 mg / l (OECD 202)
 Daphnia magna (long term) EC10 / LC10 or NOEC: 0.15 mg / L
 72-hour ErC50 algae:> 100 mg / l
 Inhibition of microbial activity Data not available, as no form of soil exposure is expected.

12.2. Persistence and degradability
SULPHURIC ACID ...%

This test can not be performed because the substance is inorganic, nor is it expected that normal use can lead to a significant release of the substance at sea.

12.3. Bioaccumulative potential
SULPHURIC ACID ...%

It is not significant as the substance is inorganic.

12.4. Mobility in soil
SULPHURIC ACID ...%

With regard to land mobility it should not be relevant. If in contact with the ground, the absorption by soil particles is negligible. Depending on the soil buffer capacity, the H⁺ ions will be neutralized in water of the soil pores by the organic or inorganic substance or the pH may decrease.

12.5. Results of PBT and vPvB assessment

Based on the available data, the product does not contain PBT or vPvB substances in percentages 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.

Waste transportation may be subject to ADR restrictions.

CONTAMINATED PACKAGING

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

SECTION 14. Transport information
14.1. UN number

ADR / RID, IMDG, IATA: 1830

14.2. UN proper shipping name

ADR / RID: SULPHURIC ACID SOLUTION

IMDG: SULPHURIC ACID SOLUTION

IATA: SULPHURIC ACID SOLUTION

14.3. Transport hazard class(es)

TC43335 - SULPHURIC ACID 35% w/w (1:3 v/v)

ADR / RID: Class: 8 Label: 8



IMDG: Class: 8 Label: 8



IATA: Class: 8 Label: 8


14.4. Packing group

ADR / RID, IMDG, IATA: II

14.5. Environmental hazards

ADR / RID: NO

IMDG: NO

IATA: NO

14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 80 Special Provision: -	Limited Quantities: 1 L	Tunnel restriction code: (E)
IMDG:	EMS: F-A, S-B	Limited Quantities: 1 L	
IATA:	Cargo: Pass.: Special Instructions:	Maximum quantity: 30 L Maximum quantity: 1 L -	Packaging instructions: 855 Packaging instructions: 851

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

Information not relevant

SECTION 15. Regulatory information
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Seveso Category - Directive 2012/18/EC: 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)

On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None

Substances subject to the Rotterdam Convention:

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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

A chemical safety assessment has been performed for the following contained substances

SULPHURIC ACID ...%

SECTION 16. Other information

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

Skin Corr. 1A	Skin corrosion, category 1A
Eye Dam. 1	Serious eye damage, category 1
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.

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. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament

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4. Regulation (EU) 2015/830 of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X Atp. CLP)

- The Merck Index. - 10th Edition

- Handling Chemical Safety

- INRS - Fiche Toxicologique (toxicological sheet)

- Patty - Industrial Hygiene and Toxicology

- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition

- IFA GESTIS website

- ECHA website

- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

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 / 14 / 15 / 16.