

## Safety Data Sheet

According to Annex II to REACH - Regulation 2020/878 and to Annex II to UK REACH

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

#### 1.1. Product identifier

Product name **AS1700**

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

Intended use **Adhesive sealant.**

#### 1.3. Details of the supplier of the safety data sheet

Name **CHT UK BRIDGWATER LTD**  
Full address **Amber House Showground Road**  
District and Country **TA6 6AJ Bridgwater (Somerset)**  
**England**  
Tel. **+44(0)1278411400**  
Fax **+44(0)1278411444**

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

**info.uk@cht.com**

Supplier:

**CHT Germany GmbH**  
**Bismarckstraße 102**  
**72072 Tübingen**  
**Germany**

#### 1.4. Emergency telephone number

For urgent inquiries refer to **Australia: 0418529118**  
**All other enquiries +44(0)1278 411400**

### 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 2020/878.

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 sensitization, category 1B	H317	May cause an allergic skin reaction.
Hazardous to the aquatic environment, chronic toxicity, category 3	H412	Harmful to aquatic life with long lasting effects.

#### 2.2. Label elements

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

Hazard pictograms:

Signal words: **Warning**

Hazard statements:

<b>H317</b>	May cause an allergic skin reaction.
<b>H412</b>	Harmful to aquatic life with long lasting effects.

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

Precautionary statements:

**P280** Wear protective gloves.  
**P261** Avoid breathing dust / fume / gas / mist / vapours / spray.  
**P333+P313** If skin irritation or rash occurs: Get medical advice / attention.  
**P362+P364** Take off contaminated clothing and wash it before reuse.

**Contains:** VINYLTRIMETHOXYSILANE

**2.3. Other hazards**

vPvB substances contained:

DODECAMETHYL CYCLOHEXASILOXANE  
 DECAMETHYLCYCLOPENTASILOXANE  
 OCTAMETHYLCYCLOTETRAILOXANE

PBT substances contained:

DODECAMETHYL CYCLOHEXASILOXANE  
 DECAMETHYLCYCLOPENTASILOXANE  
 OCTAMETHYLCYCLOTETRAILOXANE

The product contains substances with endocrine disrupting properties in concentration  $\geq 0.1\%$ .  
 OCTAMETHYLCYCLOTETRAILOXANE

**SECTION 3. Composition/information on ingredients**

**3.1. Substances**

Information not relevant

**3.2. Mixtures**

Contains:

Identification	x = Conc. %	Classification (EC) 1272/2008 (CLP)
<b>VINYLTRIMETHOXYSILANE</b>		
CAS	2768-02-7	<b>Flam. Liq. 3 H226, Acute Tox. 4 H332, Skin Sens. 1B H317 LC50 Inhalation vapours: 16.79 mg/l/4h</b>
EC	220-449-8	
INDEX		
REACH Reg.	01-2119513215-52	
<b>TETRA-ISOPROPYLTITANATE</b>		
CAS	546-68-9	<b>Flam. Liq. 3 H226, Eye Irrit. 2 H319, STOT SE 3 H336</b>
EC	208-909-6	
INDEX		
REACH Reg.	01-2119967389-17	
<b>DODECAMETHYL CYCLOHEXASILOXANE</b>		
CAS	540-97-6	<b>Substance PBT Substance vPvB</b>
EC	208-762-8	
INDEX		
REACH Reg.	01-2119517435-42	
<b>DECAMETHYLCYCLOPENTASILOXANE</b>		
CAS	541-02-6	<b>Substance PBT Substance vPvB</b>
EC	208-764-9	
INDEX		
REACH Reg.	01-2119511367-43	
<b>OCTAMETHYLCYCLOTETRAILOXANE</b>		
CAS	556-67-2	<b>Repr. 2 H361f, Aquatic Chronic 1 H410 M=10</b>
EC	209-136-7	
INDEX		
REACH Reg.	01-2119529238-36	

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

## SECTION 4. First aid measures

### 4.1. Description of first aid measures

**EYES:** Remove contact lenses, if present. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.

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

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

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

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

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

### 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

None in particular.

### 5.2. Special hazards arising from the substance or mixture

#### HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

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. 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 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

## SECTION 8. Exposure controls/personal protection

### 8.1. Control parameters

Regulatory References:

RCP TLV

ACGIH TLVs and BEIs – Appendix H

#### VINYLTRIMETHOXYSILANE

##### Predicted no-effect concentration - PNEC

Normal value in fresh water	0.34	mg/l
Normal value in marine water	0.034	mg/l
Normal value for water, intermittent release	3.4	mg/l
Normal value of STP microorganisms	110	mg/l
Normal value for the terrestrial compartment	0.046	mg/kg

##### Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation					VND	4.9 mg/m3	VND	4.9 mg/m3
Skin					VND	0.69 mg/kg bw/d	VND	0.69 mg/kg bw/d

#### DODECAMETHYL CYCLOHEXASILOXANE

##### Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
RCP TLV			10			RESP

##### Predicted no-effect concentration - PNEC

Normal value for fresh water sediment	2.826	mg/kg
Normal value for marine water sediment	0.282	mg/kg
Normal value of STP microorganisms	1	mg/l
Normal value for the terrestrial compartment	3.336	mg/kg

##### Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral								
Inhalation			0.3 mg/m3	2.7 mg/m3			1.22 mg/m3	11 mg/m3

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

**DECAMETHYLCYCLOPENTASILOXANE**

**Predicted no-effect concentration - PNEC**

Normal value in fresh water	0.0012	mg/l
Normal value in marine water	0.00012	mg/l
Normal value for fresh water sediment	2.4	mg/kg
Normal value for marine water sediment	0.24	mg/kg
Normal value of STP microorganisms	10	mg/l
Normal value for the terrestrial compartment	1.1	mg/kg

**Health - Derived no-effect level - DNEL / DMEL**

Route of exposure	Effects on consumers		Effects on workers					
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral		5		5				
				mg/kg bw/d				
Inhalation			4.3	17.3			24.2	97.3
			mg/m3	mg/m3			mg/m3	mg/m3

**OCTAMETHYLCYCLOTETRAASILOXANE**

**Predicted no-effect concentration - PNEC**

Normal value in marine water	0.044	mg/l
Normal value for fresh water sediment	0.128	mg/kg
Normal value of STP microorganisms	100	mg/l
Normal value for the terrestrial compartment	0.16	mg/kg

**Health - Derived no-effect level - DNEL / DMEL**

Route of exposure	Effects on consumers		Effects on workers					
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation	61	305	61	305				
	mg/m3	mg/m3	mg/m3	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 Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

**EYE PROTECTION**

Wear airtight protective goggles (see standard EN 166).

**RESPIRATORY PROTECTION**

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with a type A filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.

Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.

If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

**ENVIRONMENTAL EXPOSURE CONTROLS**

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

Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

**SECTION 9. Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Properties	Value	Information
Appearance	paste	
Colour	colourless	
Odour	characteristic	
Melting point / freezing point	Not available	
Initial boiling point	Not available	
Flammability	Not available	
Lower explosive limit	Not available	
Upper explosive limit	Not available	
Flash point	> 150 °C	
Auto-ignition temperature	> 400 °C	
pH	Not available	
Kinematic viscosity	Paste	
Solubility	immiscible with water	
Partition coefficient: n-octanol/water	Not available	
Vapour pressure	Not available	
Density and/or relative density	1.1	
Relative vapour density	Not available	
Particle characteristics	Not applicable	

**9.2. Other information**

9.2.1. Information with regard to physical hazard classes

Information not available

9.2.2. Other safety characteristics

VOC (Directive 2010/75/EU)	9.70 %	-	106.66	g/litre
VOC (volatile carbon)	4.00 %	-	44.00	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.

**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.

**10.4. Conditions to avoid**

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

**10.5. Incompatible materials**

Information not available

**10.6. Hazardous decomposition products**

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

**SECTION 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.

**SECTION 11. Toxicological information ... / >>****11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

Information not available

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

Information not available

Interactive effects

Information not available

ACUTE TOXICITY

ATE (Inhalation - vapours) of the mixture:	> 20 mg/l
ATE (Oral) of the mixture:	Not classified (no significant component)
ATE (Dermal) of the mixture:	Not classified (no significant component)

VINYLTRIMETHOXSILANE

LD50 (Dermal):	3460 mg/kg (Rabbit)
LD50 (Oral):	7430 mg/kg (Rat)
LC50 (Inhalation vapours):	16.79 mg/l/4h (Rat)

DECAMETHYLCYCLOPENTASILOXANE

LD50 (Oral):	4800 mg/kg (Rat)
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OCTAMETHYLCYCLOTETRAILOXANE

LD50 (Dermal):	> 2375 mg/kg Rat
LD50 (Oral):	4800 mg/kg Rat, male
LC50 (Inhalation vapours):	36 mg/l/4h Rat, male and female

SKIN CORROSION / IRRITATION

Does not meet the classification criteria for this hazard class

SERIOUS EYE DAMAGE / IRRITATION

Does not meet the classification criteria for this hazard class

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin

Respiratory sensitization

Information not available

Skin sensitization

Information not available

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

**SECTION 11. Toxicological information ... / >>**Adverse effects on sexual function and fertility

Information not available

Adverse effects on development of the offspring

Information not available

Effects on or via lactation

Information not available

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

Target organs

Information not available

Route of exposure

Information not available

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

Target organs

Information not available

Route of exposure

Information not available

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class Viscosity: Paste

**11.2. Information on other hazards**

Based on the available data, the product contains the following endocrine disruptors in concentrations of 0.1% or greater by weight that may have endocrine disrupting effects on humans and cause adverse effects on the exposed individual or his or her progeny:  
OCTAMETHYLCYCLOTETRAILOXANE

**SECTION 12. Ecological information**

This product is dangerous for the environment and the aquatic organisms. In the long term, it have negative effects on aquatic environment.

**12.1. Toxicity**

## VINYLTRIMETHOXYSILANE

LC50 - for Fish 100 mg/l/96h

## OCTAMETHYLCYCLOTETRAILOXANE

LC50 - for Fish	> 0.022 mg/l/96h Oncorhynchus mykiss
EC50 - for Crustacea	0.015 mg/l/48h Daphnia magna
EC10 for Algae / Aquatic Plants	> 0.022 mg/l/96h Pseudokirchneriella subcapitata
Chronic NOEC for Fish	> 0.0044 mg/l Oncorhynchus mykiss
Chronic NOEC for Crustacea	> 0.0015 mg/l Daphnia magna

**12.2. Persistence and degradability**

Information not available

**12.3. Bioaccumulative potential**



**SECTION 12. Ecological information** ... / >>

Information not available

**12.4. Mobility in soil**

Information not available

**12.5. Results of PBT and vPvB assessment**

vPvB substances contained:

DODECAMETHYL CYCLOHEXASILOXANE  
DECAMETHYLCYCLOPENTASILOXANE  
OCTAMETHYLCYCLOTETRAASILOXANE

PBT substances contained:

DODECAMETHYL CYCLOHEXASILOXANE  
DECAMETHYLCYCLOPENTASILOXANE  
OCTAMETHYLCYCLOTETRAASILOXANE

**12.6. Endocrine disrupting properties**

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with environmental effects under evaluation.

**12.7. 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.

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.

**14.1. UN number or ID number**

Not applicable

**14.2. UN proper shipping name**

Not applicable

**14.3. Transport hazard class(es)**

Not applicable

**14.4. Packing group**

Not applicable

**SECTION 14. Transport information ... / >>**

**14.5. Environmental hazards**

Not applicable

**14.6. Special precautions for user**

Not applicable

**14.7. Maritime transport in bulk according to IMO instruments**

Information not relevant

**SECTION 15. Regulatory information**

Australia AICS: On or in compliance with the inventory.  
Canada DSL Inventory List: On or in compliance with the inventory.  
EINECS, ELINCS or NLP: On or in compliance with the inventory.  
Japan (ENCS) List: On or in compliance with the inventory.  
China Inv. Existing Chemical Substances: On or in compliance with the inventory.  
Korea Existing Chemicals Inv. (KECI): On or in compliance with the inventory.  
Philippines PICCS: On or in compliance with the inventory.  
US TSCA Inventory: On or in compliance with the inventory.  
New Zealand Inventory of Chemicals: On or in compliance with the inventory.  
Taiwan Chemical Substance Inventory: On or in compliance with the inventory.

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

Seveso Category - Directive 2012/18/EU: None

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

<u>Product</u>		
Point	3 - 40	
<u>Contained substance</u>		
Point	70-75	OCTAMETHYLCYCLOTETRASILOXANE
		REACH Reg.: 01-2119529238-36
Point	70	DECAMETHYLCYCLOPENTASILOXANE
		REACH Reg.: 01-2119511367-43

Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors  
Not applicable

Substances in Candidate List (Art. 59 REACH)  
DODECAMETHYL CYCLOHEXASILOXANE  
REACH Reg.: 01-2119517435-42

DECAMETHYLCYCLOPENTASILOXANE  
REACH Reg.: 01-2119511367-43

OCTAMETHYLCYCLOTETRASILOXANE  
REACH Reg.: 01-2119529238-36

Substances subject to authorisation (Annex XIV REACH)  
None

Substances subject to exportation reporting pursuant to Regulation (EU) 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.

**SECTION 15. Regulatory information ... / >>**

German regulation on the classification of substances hazardous to water (AwSV, vom 18. April 2017)

WGK 1: Low hazard to waters

**15.2. Chemical safety assessment**

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

**SECTION 16. Other information**

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

<b>Flam. Liq. 3</b>	Flammable liquid, category 3
<b>Repr. 2</b>	Reproductive toxicity, category 2
<b>Acute Tox. 4</b>	Acute toxicity, category 4
<b>Eye Irrit. 2</b>	Eye irritation, category 2
<b>Skin Sens. 1B</b>	Skin sensitization, category 1B
<b>STOT SE 3</b>	Specific target organ toxicity - single exposure, category 3
<b>Aquatic Chronic 1</b>	Hazardous to the aquatic environment, chronic toxicity, category 1
<b>Aquatic Chronic 3</b>	Hazardous to the aquatic environment, chronic toxicity, category 3
<b>H226</b>	Flammable liquid and vapour.
<b>H361f</b>	Suspected of damaging fertility.
<b>H332</b>	Harmful if inhaled.
<b>H319</b>	Causes serious eye irritation.
<b>H317</b>	May cause an allergic skin reaction.
<b>H336</b>	May cause drowsiness or dizziness.
<b>H410</b>	Very toxic to aquatic life with long lasting effects.
<b>H412</b>	Harmful to aquatic life with long lasting effects.

**LEGEND:**

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE: Identifier in ESIS (European archive of existing substances)
- CLP: Regulation (EC) 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: 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: Regulation (EC) 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: Time-weighted average exposure limit
- TWA STEL: Short-term 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) 2020/878 (II Annex of REACH Regulation)
4. Regulation (EC) 790/2009 (I Atp. CLP) 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

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

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)
14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2019/521 (XII Atp. CLP)
16. Delegated Regulation (UE) 2018/1480 (XIII Atp. CLP)
17. Regulation (EU) 2019/1148
18. Delegated Regulation (UE) 2020/217 (XIV Atp. CLP)
19. Delegated Regulation (UE) 2020/1182 (XV Atp. CLP)
20. Delegated Regulation (UE) 2021/643 (XVI Atp. CLP)
21. Delegated Regulation (UE) 2021/849 (XVII 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.

**CALCULATION METHODS FOR CLASSIFICATION**

Chemical and physical hazards: Product classification derives from criteria established by the CLP Regulation, Annex I, Part 2. The data for evaluation of chemical-physical properties are reported in section 9.

Health hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 3, unless determined otherwise in Section 11.

Environmental hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 4, unless determined otherwise in Section 12.

**Changes to previous review:**

The following sections were modified:

02 / 03 / 08 / 11 / 16.