

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

Code: 25/001
Product name: PRONORTEC AL-02
UFI: 3RM0-C0P6-100H-T1T0

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

Intended use: Surface treatment of metals.
Uses advised against: Different uses than those intended.

1.3. Details of the supplier of the safety data sheet

Name: CHEMTEC S.R.L.
Full address: Via Alberto da Giussano 36/O
District and Country: 20011 CORBETTA (MI)
ITALY
tel. +39 02 92867461

e-mail address of the competent person

responsible for the Safety Data Sheet: laboratorio@chemtec.it
Supplier: CHEMTEC S.R.L.

1.4. Emergency telephone number

For urgent inquiries refer to: Local emergency services CHEMTEC S.R.L. +39 02 92867461 (Technical support - Office hour 8.30-12.30 - 13.30-17.30)

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:

Eye irritation, category 2	H319	Causes serious eye irritation.
Skin irritation, category 2	H315	Causes skin irritation.

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:

H319 Causes serious eye irritation.
H315 Causes skin irritation.

Precautionary statements:

P280 Wear protective gloves / eye protection / face protection.
P337+P313 If eye irritation persists: get medical advice / attention.
P264 Wash the skin thoroughly after handling.

2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage $\geq$ than 0,1%.
The product does not contain substances with endocrine disrupting properties in concentration $\geq$ 0.1%.

SECTION 3. Composition/information on ingredients**3.2. Mixtures**

Contains:

Identification	X= Conc. %	Classification (EC) 1272/2008 (CLP)
DIHYDROGEN HEXAFLUOROZIRCONATE(2-)		
INDEX -	$1,0 \leq x < 2,0$	Met. Corr. 1 H290, Acute Tox. 3 H301, Acute Tox. 3 H311, Acute Tox. 3 H331, Skin Corr. 1B H314, Eye Dam. 1 H318
EC 234-666-0		STA Oral: 100 mg/kg, STA Dermal: 300 mg/kg, STA Inhalation vapours: 3 mg/l, STA Inhalation mists/powders: 0,501 mg/l
CAS 12021-95-3		
REACH Reg. 01-2119978267-22		
HYDROFLUORIC ACID		
INDEX 009-003-00-1	$0,01 \leq x \leq 0,02$	Acute Tox. 1 H310, Acute Tox. 2 H300, Acute Tox. 2 H330, Skin Corr. 1A H314, Eye Dam. 1 H318, Classification note according to Annex VI to the CLP Regulation: B
EC 231-634-8		Skin Corr. 1A H314: $\geq 7\%$, Skin Corr. 1B H314: $\geq 1\%$, Eye Irrit. 2 H319: $\geq 0,1\%$
CAS 7664-39-3		STA Oral: 5,001 mg/kg, STA Dermal: 5 mg/kg, STA Inhalation vapours: 0,501 mg/l
REACH Reg. 01- 2119458860-33		

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 30-60 minutes, opening the eyelids fully. Get medical advice/attention.

DIHYDROGEN HEXAFLUOROZIRCONATE(2-)

In the event of contact with the eyes, it produces tears and produces painful burns that can cause permanent vision damage or blindness.

SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.

DIHYDROGEN HEXAFLUOROZIRCONATE(2-)

It can be absorbed through the skin in toxic amounts.

In case of accidental release, immediately remove contaminated clothing by washing with plenty of water for at least 5 minutes. Massage the contaminated part with 2.5% calcium gluconate gel up to 15 minutes after the pain has disappeared.

If necessary, apply a bandage or dressing soaked in 10% calcium gluconate solution. If calcium gluconate is not available, flush with water for at least 15 minutes.

For skin burns larger than the surface of the hand (about 150 cm²) and under medical supervision, administer 4 effervescent calcium tablets orally (400 mg of calcium per tablet) dissolved in water. Repeat this dose every 2 hours until you get to the hospital.

For severe burns, immerse the victim in a bath of 1-5% calcium gluconate solution. SEE A DOCTOR IMMEDIATELY.

INGESTION: Have the subject drink as much water as possible. Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.

DIHYDROGEN HEXAFLUOROZIRCONATE(2-)

If ingested it causes necrosis of the mouth of the esophagus and stomach resulting in nausea, vomiting, diarrhea and circulatory collapse. Immediate treatment is essential to reduce the severity of the consequences of burning or poisoning. In both cases, medical advice / assistance is always advisable.

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.

DIHYDROGEN HEXAFLUOROZIRCONATE(2-)

Administer the calcium tablets as in case of skin contact. If breathing is labored, administer oxygen via a face mask.

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 for the doctor: symptomatically treatment.

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

Ensure that there is an adequate earthing system for the equipment and personnel. Avoid contact with eyes and skin. Do not breathe powders, vapours or mists. Do not eat, drink or smoke during use. Wash hands after 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 in a ventilated and dry place, far away from sources of ignition. Keep containers well sealed. Keep the product in clearly labelled containers. Avoid overheating. Avoid violent blows. Keep containers away from any incompatible materials, see section 10 for details.

Storage class TRGS 510 (Germany): 10

7.3. Specific end use(s)
Surface treatment of metals.

SECTION 8. Exposure controls/personal protection

8.1. Control parameters
Regulatory References:

AUS	Österreich	Gesamte Rechtsvorschrift für Grenzwerteverordnung 2021 , Fassung vom 17.06.2021
BEL	Belgique	Liste de valeurs limites d'exposition aux agents chimiques, livre VI du code du bien-être au travail
CHE	Suisse / Schweiz	Valeurs limites d'exposition aux postes de travail: VME/VLE (SUVA). Grenzwerte am Arbeitsplatz: MAK (SUVA)
DEU	Deutschland	Technischen Regeln für Gefahrstoffe (TRGS 900) - Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte. MAK- und BAT-Werte-Liste 2020, Ständige Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe, Mitteilung 56
DNK	Danmark	Bekendtgørelse om grænseværdier for stoffer og materialer - BEK nr 1458 af 13/12/2019
ESP	España	Límites de exposición profesional para agentes químicos en España 2021
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 - INRS
FIN	Suomi	HTP-VÄRDEN 2020. Koncentrationer som befunnits skadliga. SOCIAL - OCH HÄLSOVÄRDSMINISTERIETS PUBLIKATIONER 2020:25
HUN	Magyarország	Az innovációért és technológiáért felelős miniszter 5/2020. (II. 6.) ITM rendelete a kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
IRL	Éire	2020 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations (2001-2015) and the Safety, Health and Welfare at Work (Carcinogens) Regulations (2001-2019)
LVA	Latvija	Grozījumi Ministru kabineta 2007. gada 15. maija noteikumos Nr. 325 "Darba aizsardzības prasības saskarē ar ķīmiskajām vielām darba vietās" (prot. Nr. 32 18. §; prot. Nr. 1 22. §)
NLD	Nederland	Arbeidsomstandighedenregeling. Lijst van wettelijke grenswaarden op grond van de artikelen 4.3, eerste lid, en 4.16, eerste lid, van het Arbeidsomstandighedenbesluit
POL	Polska	Rozporządzenie ministra rozwoju, pracy i technologii z dnia 18 lutego 2021 r. Zmieniające rozporządzenie w sprawie najwyższych dopuszczalnych stężeń i natężeń czynników szkodliwych dla zdrowia w środowisku pracy
ROU	România	Hotărârea nr. 53/2021 pentru modificarea hotărârii guvernului nr. 1.218/2006, precum și pentru modificarea și completarea hotărârii guvernului nr. 1.093/2006
SWE	Sverige	Hygieniska gränsvärden, Arbetsmiljöverkets föreskrifter och allmänna råd om hygieniska gränsvärden (AFS 2018:1)
TUR	Türkiye	Kimyasal Maddelerle Çalışmalarda Sağlık ve Güvenlik Önlemleri Hakkında Yönetmelik 12.08.2013 / 28733
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Fourth Edition 2020)
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.

DIHYDROGEN HEXAFLUOROZIRCONATE(2-)

LIMIT VALUES FOR REPEATED EXPOSURE
VLA-ED 5 mg/m3 (Zr) – INSHT Guide
VLA-ED 1,5 mg HF/m3 – INSHT Guide

LIMIT VALUES FOR SHORT EXPOSURE
VLA-EC 2,5 mg HF/m3 – INSHT Guide
VLA-EC 10 mg/m3 (Zr) – INSHT Guide

BIOLOGICAL LIMIT VALUE
VLB – before the shift 2 mg/l
VLB – after the shift 3 mg/l

DIHYDROGEN HEXAFLUOROZIRCONATE(2-)		
Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,119	mg/l
Normal value in marine water	0,119	mg/l
Normal value for fresh water sediment	21,1	mg/kg/d
Normal value for marine water sediment	4,22	mg/kg/d
Normal value for water, intermittent release	0,078	mg/l

Normal value of STP microorganisms				1,29	mg/l			
Normal value for the terrestrial compartment				16,5	mg/kg/d			
Health - Derived no-effect level - DNEL / DMEL								
		Effects on consumers			Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation							4,5 mg/m3	
Skin							65 mg/m3	

HYDROFLUORIC ACID Threshold Limit Value					
Type	Country	TWA/8h		STEL/15min	Remarks / Observations
		mg/m3	ppm	mg/m3	ppm
MAK	AUS	1,5	1,8	2,5	3
VLEP	BEL	1,5	1,8	2,5	3
MAK	CHE	0,83	1	1,66	2
AGW	DEU	0,83	1	1,66	2
MAK	DEU	0,83	1	1,66	2
TLV	DNK	1,5	1,8	3	3,6
VLA	ESP	1,5	1,8	2,5	3
VLEP	FRA	1,5	1,8	2,5	3
HTP	FIN	1,5	1,8	2,5	3
AK	HUN	1,5		2,5	
VLEP	ITA	1,5	1,8	2,5	3
OELV	IRL	1,5	1,8	2,5	3
RV	LVA	1,5	1,8	2,5	3
TGG	NLD			1	
NDS/NDSch	POL	0,5		2	
TLV	ROU	1,5	1,8	2,5	3
NGV/KGV	SWE	1,5	1,8	1,7	2
ESD	TUR	1,5	1,8	2,5	3
WEL	GBR	1,5	1,8	2,5	3
OEL	EU	1,5	1,8	2,5	3

Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,9	mg/l
Normal value in marine water	0,9	mg/l
Normal value of STP microorganisms	51	mg/l
Normal value for the terrestrial compartment	11	mg/kg/d

Health - Derived no-effect level - DNEL / DMEL								
	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral	1,25	0,01 mg/kg bw/d		0,01 mg/kg bw/d				
Inhalation	1,25 mg/m3	0,03 mg/m3	0,2 mg/m3	0,03 mg/m3	2,5 mg/m3	2,5 mg/m3	0,0015 mg/m3	1,5 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 ; LOW = low hazard ; MED = medium hazard ; HIGH = high hazard.

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 B filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.

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

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

ENVIRONMENTAL EXPOSURE CONTROLS

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

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

Appearance	liquid	
Colour	colourless	
Odour	mild	
Melting point / freezing point	not available	
Initial boiling point	100 °C	
Flammability	not available	
Lower explosive limit	not available	
Upper explosive limit	not available	
Flash point	not flammable	Note: water solution
Auto-ignition temperature	not available	
Decomposition temperature	not available	

pH	2,5 - 3,0
Kinematic viscosity	not available
Solubility	in water: soluble
Partition coefficient: n-octanol/water	not available
Vapour pressure	not available
Density and/or relative density	1,00 - 1,10 Kg/l
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
Information not available

SECTION 10. Stability and reactivity**10.1. Reactivity**

There are no particular risks of reaction with other substances in normal conditions of use.
DIHYDROGEN HEXAFLUOROZIRCONATE(2-)
Corrodes: metals.

10.2. Chemical stability

The product is stable in normal conditions of use and storage.

10.3. Possibility of hazardous reactions

No hazardous reactions are foreseeable in normal conditions of use and storage.
DIHYDROGEN HEXAFLUOROZIRCONATE(2-)
Develops hydrogen on contact with: metals.
HYDROFLUORIC ACID
Decomposes on contact with: heat.

10.4. Conditions to avoid

None in particular. However the usual precautions used for chemical products should be respected.
DIHYDROGEN HEXAFLUOROZIRCONATE(2-)
Avoid exposure to: sources of heat, heating.
HYDROFLUORIC ACID
Avoid contact with: glass, ceramic, metals, oxidising agents.

10.5. Incompatible materials

DIHYDROGEN HEXAFLUOROZIRCONATE(2-)
In contact with steel and many other metals, possible release of flammable hydrogen gases. Attack the silica, the silicates and in particular the glass. Uncured materials are in glass, cement, materials containing silica, ceramic, natural rubber, leather and many organic polymers. Reacts intensely with Lisciva.
HYDROFLUORIC ACID
May react dangerously if exposed to: oxidising agents, alkaline substances, organic substances.

10.6. Hazardous decomposition products

DIHYDROGEN HEXAFLUOROZIRCONATE(2-)
Sviluppa: hydrofluoric acid.
HYDROFLUORIC ACID
Develops hydrogen on contact with: moisture, metals.

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.

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 - mists / powders) of the mixture:	> 5 mg/l
ATE (Inhalation - vapours) of the mixture:	> 20 mg/l
ATE (Inhalation - gas) of the mixture:	0,0 mg/l
ATE (Oral) of the mixture:	>2000 mg/kg
ATE (Dermal) of the mixture:	>2000 mg/kg

DIHYDROGEN HEXAFLUOROZIRCONATE(2-)

STA (Oral):	100 mg/kg estimate from table 3.1.2 of Annex I of the CLP (figure used for calculation of the acute toxicity estimate of the mixture)
STA (Dermal):	300 mg/kg estimate from table 3.1.2 of Annex I of the CLP (figure used for calculation of the acute toxicity estimate of the mixture)
STA (Inhalation mists/powders):	0,501 mg/l estimate from table 3.1.2 of Annex I of the CLP (figure used for calculation of the acute toxicity estimate of the mixture)
STA (Inhalation vapours):	3 mg/l estimate from table 3.1.2 of Annex I of the CLP (figure used for calculation of the acute toxicity estimate of the mixture)

HYDROFLUORIC ACID

LC50 (Inhalation vapours):	1307 ppm/1h Rat
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SKIN CORROSION / IRRITATION

Causes skin irritation

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye irritation

RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

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

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

11.2. Information on other hazards

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

SECTION 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**DIHYDROGEN****HEXAFLUOROZIRCONATE(2-)**

LC50 - for Fish 125,8 mg/l/96h

EC50 - for Crustacea 110,7 mg/l/48h

EC50 - for Algae / Aquatic Plants 7,79 mg/l/72h

Chronic NOEC for Fish 4 mg/l 21d

Chronic NOEC for Crustacea 13,1 mg/l 21d

HYDROFLUORIC ACID

LC50 - for Fish 51 mg/l/96h

Chronic NOEC for Fish 4 mg/l 21d

Chronic NOEC for Crustacea 8,9 mg/l 21d

Chronic NOEC for Algae / Aquatic Plants 50 mg/l 21d

12.2. Persistence and degradability**HYDROFLUORIC ACID**

Solubility in water Soluble

12.3. Bioaccumulative potential**DIHYDROGEN HEXAFLUOROZIRCONATE(2-)**

Fluorozirconica acid disappears quickly in fluoride, hydrogen and zirconium ions.

Hydrogen and zirconium ions do not remain in nature as such, the fluoride ions yes. On the basis of this, the product has no bioaccumulus potential in aquatic organisms.

The substance does not satisfy the criteria for classification as bioaccumulable or very bioaccumulable.

12.4. Mobility in soil

Information not available

12.5. Results of PBT and vPvB assessment

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

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

CHEMTEC S.R.L.	Revision nr. 1
25/001 - PRONORTEC AL-02	Dated 14/01/2025
	Printed on 14/01/2025
	Page n. 10/13

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

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

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

<u>Contained substance</u>	
Point	75

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

Substances in Candidate List (Art. 59 REACH)
On the basis of available data, the product does not contain any SVHC in percentage $\geq$ than 0,1%.

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.

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 mixture.

SECTION 16. Other information

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

Met. Corr. 1	Substance or mixture corrosive to metals, category 1
Acute Tox. 1	Acute toxicity, category 1
Acute Tox. 2	Acute toxicity, category 2
Acute Tox. 3	Acute toxicity, category 3
Skin Corr. 1A	Skin corrosion, category 1A
Skin Corr. 1B	Skin corrosion, category 1B
Eye Irrit. 2	Eye irritation, category 2
Skin Irrit. 2	Skin irritation, category 2
H290	May be corrosive to metals.
H310	Fatal in contact with skin.
H300	Fatal if swallowed.
H330	Fatal if inhaled.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H314	Causes severe skin burns and eye damage.
H319	Causes serious eye irritation.
H315	Causes skin irritation.

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).

Classification and procedure used to derive it in accordance with Regulation (EC) 1272/2008 (CLP) in relation to mixtures:

Classification according to Regulation (EC) No. 1272/2008	Classification procedure
Eye Irrit. 2 H319	Calculation method
Skin Irrit. 2 H315	Calculation method

GENERAL BIBLIOGRAPHY

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 4. Regulation (EC) 790/2009 (I Atp. CLP) of the European Parliament
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 16. Delegated Regulation (UE) 2018/1480 (XIII Atp. CLP)
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 22. Delegated Regulation (UE) 2022/692 (XVIII Atp. CLP)
- The Merck Index. - 10th Edition
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 - INRS - Fiche Toxicologique (toxicological sheet)
 - Patty - Industrial Hygiene and Toxicology
 - N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
 - IFA GESTIS website
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 - 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.

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25/001 - PRONORTEC AL-02	Dated 14/01/2025
	Printed on 14/01/2025
	Page n. 13/13

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 / 07 / 08 / 09 / 10 / 11 / 12 / 15 / 16.