

SAFETY DATA SHEET

(REACH regulation (EC) n° 1907/2006 - n° 2020/878)

SECTION 1 : IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name : ELECTROLYTE D 62 1/2 Product code : 17108-1. ELECTROLYTE D 62 1/2 / ELEKTROLYT D 62 1/2 / ELECTROLIT D 62 1/2 UFI : NT40-50W1-T00H-7HTH

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

1.3. Details of the supplier of the safety data sheet

Registered company name : PRESI S.A.S. Address : 11 Rue du vercors.38320.EYBENS.France. Telephone : +33 (0)4.76.72.00.21. Fax : +33 (0)4.76.72.05.84. presi@presi.com www.presi.com

1.4. Emergency telephone number : +33 (0)1.45.42.59.59.

Association/Organisation : INRS / ORFILA http://www.centres-antipoison.net.

SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

In compliance with EC regulation No. 1272/2008 and its amendments.

Flammable liquid, Category 2 (Flam. Liq. 2, H225).

Oxidising liquid, Category 2 (Ox. Liq. 2, H272).

Acute oral toxicity, Category 4 (Acute Tox. 4, H302).

Skin irritation, Category 2 (Skin Irrit. 2, H315).

Hazardous to the aquatic environment - Acute hazard, Category 1 (Aquatic Acute 1, H400).

Hazardous to the aquatic environment - Chronic hazard, Category 1 (Aquatic Chronic 1, H410).

2.2. Label elements

In compliance with EC regulation No. 1272/2008 and its amendments.

Hazard pictograms :



GHS09

H315 H410





Signal Word : DANGER Product identifiers : EC 221-838-5 Hazard statements : H225 H272 H302

CUIVRE (II) NITRATE 3 H2O

GHS03

Highly flammable liquid and vapour. May intensify fire; oxidiser. Harmful if swallowed. Causes skin irritation. Very toxic to aquatic life with long lasting effects.



Precautionary statements - Prevention	:
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220	Keep away from clothing and other combustible materials.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/
Precautionary statements - Response :	
P302 + P352	IF ON SKIN: Wash with plenty of water/
P321	Specific treatment (see on this label).
P391	Collect spillage.
Precautionary statements - Storage :	
P403 + P235	Store in a well-ventilated place. Keep cool.
Precautionary statements - Disposal :	
P501	Dispose of the contents/container in a safe manner and in accordance with local, regional, or national regulations.

2.3. Other hazards

The mixture does not contain substances classified as 'Substances of Very High Concern' (SVHC) >= 0.1% published by the European CHemicals Agency (ECHA) under article 57 of REACH: http://echa.europa.eu/fr/candidate-list-table

The mixture fulfils neither the PBT nor the vPvB criteria for mixtures in accordance with annexe XIII of the REACH regulations EC 1907/2006.

The mixture does not contain substances> = 0.1% with endocrine disrupting properties in accordance with the criteria of the Delegated Regulation (EU) 2017/2100 of the Commission or Regulation (EU) 2018/605 of the Commission.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Composition :

Identification	Classification (EC) 1272/2008	Note	%
INDEX: 603-002-00-5	GHS02	[1]	$50 \le x \% \le 100$
CAS: 64-17-5	Dgr		
EC: 200-578-6	Flam. Liq. 2, H225		
REACH: 01-2119457610-43-0000			
ETHANOL			
CAS: 10031-43-3	GHS07, GHS09, GHS03		$25 \le x \% \le 50$
EC: 221-838-5	Dgr		
REACH: 01-2119969290-34-0000	Ox. Sol. 2, H272		
	Acute Tox. 4, H302		
CUIVRE (II) NITRATE 3 H2O	Skin Irrit. 2, H315		
	Aquatic Acute 1, H400		
	M Acute = 1		
	Aquatic Chronic 1, H410		
	M Chronic $= 1$		

Specific concentration limits:			
Identification	Specific concentration limits	ATE	
CAS: 10031-43-3	Ox. Sol. 2: H272 C>= 25%		
EC: 221-838-5	Ox. Sol. 3: H272 25% > C >= 10%		
REACH: 01-2119969290-34-0000			
CUIVRE (II) NITRATE 3 H2O			

Information on ingredients :

(Full text of H-phrases: see section 16)

[1] Substance for which maximum workplace exposure limits are available.



SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor. NEVER induce swallowing by an unconscious person.

4.1. description of first aid measures

In the event of splashes or contact with eyes :

Wash thoroughly with fresh, clean water for 15 minutes holding the eyelids open.

Consult a physician if necessary

In the event of splashes or contact with skin :

Remove contaminated clothing and wash the skin thoroughly with soap and water or a recognised cleaner.

Watch out for any remaining product between skin and clothing, watches, shoes, etc.

If the contaminated aera is widespread and/or there is damage to the skin, a doctor must be consulted or the patient transferred to hospital.

In the event of swallowing :

Do not give the patient anything orally.

In the event of swallowing, if the quantity is small (no more than one mouthful), rinse the mouth with water, administer activated medical charcoal and consult a doctor.

Keep the person exposed at rest. Do not force vomiting.

Seek medical attention immediately, showing the label.

If swallowed accidentally, call a doctor to ascertain whether observation and hospital care will be necessary. Show the label.

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

No data available.

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

No data available.

SECTION 5 : FIREFIGHTING MEASURES

Flammable.

Chemical powders, carbon dioxide and other extinguishing gas are suitable for small fires.

Oxidising mixture which may ignite or increase the risk of flammability when in contact with combustible materials.

5.1. Extinguishing media

Keep packages near the fire cool, to prevent pressurised containers from bursting.

Suitable methods of extinction

In the event of a fire, use :

- sprayed water or water mist
- water with AFFF (Aqueous Film Forming Foam) additive
- halon
- foam
- multipurpose ABC powder
- BC powder
- carbon dioxide (CO2)

Prevent the effluent of fire-fighting measures from entering drains or waterways.

Unsuitable methods of extinction

In the event of a fire, do not use :

- water jet

5.2. Special hazards arising from the substance or mixture

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed :

- carbon monoxide (CO)
- carbon dioxide (CO2)



- nitrogen oxide (NO)

- nitrogen dioxide (NO2)

5.3. Advice for firefighters

Due to the toxicity of the gas emitted on thermal decomposition of the products, fire-fighting personnel are to be equipped with autonomous insulating breathing apparatus.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

For non first aid worker

Because of the organic solvents contained in the mixture, eliminate sources of ignition and ventilate the area.

Avoid any contact with the skin and eyes.

For first aid worker

First aid workers will be equipped with suitable personal protective equipment (See section 8).

6.2. Environmental precautions

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.

Prevent any material from entering drains or waterways.

If the product contaminates waterways, rivers or drains, alert the relevant authorities in accordance with statutory procedures

Use drums to dispose of collected waste in compliance with current regulations (see section 13).

6.3. Methods and material for containment and cleaning up

If the ground is contaminated, once the product has been recovered by sponging with an inert and non-combustible absorbent material, wash the contaminated area in plenty of water.

Clean preferably with a detergent, do not use solvents.

6.4. Reference to other sections

No data available.

SECTION 7 : HANDLING AND STORAGE

Requirements relating to storage premises apply to all facilities where the mixture is handled.

7.1. Precautions for safe handling

Always wash hands after handling.

Remove and wash contaminated clothing before re-using.

Ensure that there is adequate ventilation, especially in confined areas.

Remove contaminated clothing and protective equipment before entering eating areas.

Fire prevention :

Handle in well-ventilated areas.

Vapours are heavier than air. They can spread along the ground and form mixtures that are explosive with air.

Prevent the formation of flammable or explosive concentrations in air and avoid vapor concentrations higher than the occupational exposure limits.

Prevent the accumulation of electrostatic charges with connections to earth.

The mixture can become electrostatically charged: always ground when decanting. Wear antistatic shoes and clothing and make floors of non-conductive

Use the mixture in premises free of naked flames or other sources of ignition and ensure that electrical equipment is suitably protected.

Keep packages tightly closed and away from sources of heat, sparks and naked flames.

Do not use tools which may produce sparks. Do not smoke.

Prevent access by unauthorised personnel.

Recommended equipment and procedures :

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

Keep away from combustible material.



Packages which have been opened must be reclosed carefully and stored in an upright position.

Prohibited equipment and procedures :

No smoking, eating or drinking in areas where the mixture is used.

Never open the packages under pressure.

7.2. Conditions for safe storage, including any incompatibilities

No data available.

Storage

Keep the container tightly closed in a dry, well-ventilated place.

Keep away from food and drink, including those for animals.

Keep away from all sources of ignition - do not smoke.

Keep away from combustible material.

Keep well away from all sources of ignition, heat and direct sunlight.

Avoid accumulation of electrostatic charges.

The floor must be impermeable and form a collecting basin so that, in the event of an accidental spillage, the liquid cannot spread beyond this area.

Packaging

Always keep in packaging made of an identical material to the original.

Suitable packaging materials :

- Polyethylene

7.3. Specific end use(s)

No data available.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits :

- ACGIH TLV (American Conference of Governmental Industrial Hygienists, Threshold Limit Values, 2010) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :		
64-17-5		1000 ppm		A3]	
- Germany - AG	W (BAuA - TRGS	900, 02/2022) :					
CAS	VME :	VME :	Excess	Notes]		
64-17-5		200 ppm		4(II)	1		
		380 mg/m3					
- Canada / Quebo	ec (Regulations on	occupational he	alth and safety)	:	_		
CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :]	
64-17-5		1000 ppm		C3		1	
- France (INRS -	- Outils 65 / 2021-1	849, 2021-1763	3, decree of 09/1	2/2021) :		-	
CAS	VME-ppm :	VME-mg/m3:	VLE-ppm :	VLE-mg/m3 :	Notes :	TMP No :	1
64-17-5	1000	1900	5000	9500	-	84	
- Switzerland (Su	uva 2021) :						
CAS	VME	VLE	Valeur plafond	Notations			
64-17-5	500 ppm	1000 ppm]		
	960 mg/m3	1920 mg/m3					
- USA / NIOSH	IDLH (National In	stitute for Occu	pational Safety	and Health, Imr	- nediately Dange	rous to Life or l	Health Concentrations
CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :]	
64-17-5	-	-	3300	-	-	1	
- UK / WEL (We	orkplace exposure l	imits, EH40/20	05, Fourth Editi	on 2020) :		-	
CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :]	
64-17-5	1000 ppm]	
	1920 mg/m3						



Derived no effect level (DNEL) or derived minimum effect level (DMEL):

ETHANOL (CAS: 64-17-5) Final use: Exposure method: Potential health effects: DNEL :

Exposure method: Potential health effects: DNEL :

Exposure method: Potential health effects: DNEL :

Final use:

Exposure method: Potential health effects: DNEL :

Predicted no effect concentration (PNEC):

CUIVRE (II) NITRATE 3 H2O (CAS: 10031-43-3) Environmental compartment: Soil. PNEC : 65 mg/kg Environmental compartment: Fresh water. PNEC : 7.8 µg/l Environmental compartment: Sea water. 5.2 µg/l PNEC : Environmental compartment: Fresh water sediment. PNEC : 87 mg/kg Environmental compartment: Marine sediment. 676 mg/kg PNEC :

Environmental compartment: PNEC :

ETHANOL (CAS: 64-17-5)

Workers. Dermal contact. Long term local effects. 343 mg/kg body weight/day

Inhalation. Long term systemic effects. 950 mg of substance/m3

Inhalation. Short term local effects. 1900 mg of substance/m3

Man exposed via the environment.

Ingestion. Long term systemic effects. 87 mg/kg body weight/day

Dermal contact. Long term systemic effects. 206 mg/kg body weight/day

Inhalation. Long term systemic effects. 114 mg of substance/m3

Inhalation. Short term local effects. 950 mg of substance/m3

Waste water treatment plant.

230 µg/l



Environmental compartment:	Soil.
PNEC :	0.63 mg/kg
Environmental compartment:	Fresh water.
PNEC :	0.96 mg/l
Environmental compartment:	Sea water.
PNEC :	0.79 mg/l
Environmental compartment:	Intermittent waste water.
PNEC :	2.75 mg/l
Environmental compartment:	Fresh water sediment.
PNEC :	3.6 mg/kg
Environmental compartment:	Marine sediment.
PNEC :	2.9 mg/kg
Environmental compartment:	Waste water treatment plant.
PNEC :	580 mg/l
Environmental compartment:	Fresh water predators (oral).
PNEC :	0.72 mg/kg

8.2. Exposure controls

Personal protection measures, such as personal protective equipment

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE) :



Use personal protective equipment that is clean and has been properly maintained.

Store personal protective equipment in a clean place, away from the work area.

Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

- Eye / face protection

Avoid contact with eyes.

Use eye protectors designed to protect against liquid splashes

Before handling, wear safety goggles in accordance with standard EN166.

- Hand protection

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN ISO 374-1.

Gloves must be selected according to the application and duration of use at the workstation.

Protective gloves need to be selected according to their suitability for the workstation in question : other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.

Type of gloves recommended :

- Nitrile rubber (butadiene-acrylonitrile copolymer rubber (NBR))

- Body protection

Avoid skin contact.

Wear suitable protective clothing.

Suitable type of protective clothing :

In the event of substantial spatter, wear liquid-tight protective clothing against chemical risks (type 3) in accordance with EN14605/A1 to prevent skin contact.



In the event of a risk of splashing, wear protective clothing against chemical risks (type 6) in accordance with EN13034/A1 to prevent skin contact.

Wear suitable protective clothing and, in particular, an apron and boots. These items of clothing shall be maintained in good condition and cleaned after use.

Suitable type of protective boots :

In the event of minor spatter, wear protective boots or half-boots against chemical risks in accordance with standard EN13832-2.

In the event of prolonged contact, wear boots or half-boots with liquid-chemical-resistant and waterproof soles and uppers in accordance with standard EN13832-3.

Work clothing worn by personnel shall be laundered regularly.

After contact with the product, all parts of the body that have been soiled must be washed.

- Respiratory protection

Anti-gas and vapour filter(s) (Combined filters) in accordance with standard EN14387 :

- A2 (Brown)

- A3 (Brown)

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state Physical state :	Fluid liquid.
Colour Color:	Blue
Odour Odour threshold : Odour:	Not stated. Alcohol
Melting point Melting point/melting range :	Not specified.
Freezing point Freezing point / Freezing range :	Not stated.
Boiling point or initial boiling point and boiling Boiling point/boiling range :	range > 35°C
Flammability Flammability (solid, gas) :	Not stated.
Lower and upper explosion limit Explosive properties, lower explosivity limit (% : Explosive properties, upper explosivity limit (% :	
Flash point Flash Point Interval :	FP < 23°C
Auto-ignition temperature Self-ignition temperature :	Not specified.
Decomposition temperature Decomposition point/decomposition range :	Not specified.
pH pH:	Not stated. Slightly acidic. Not stated.
pH (aqueous solution) : Kinematic viscosity Viscosity :	Not stated.



Solubility Water solubility :	Soluble.
Fat solubility :	Not stated.
Partition coefficient n-octanol/water (log v Partition coefficient: n-octanol/water :	alue) Not stated.
Vapour pressure Vapour pressure (50°C) :	Not relevant.
Density and/or relative density Density :	< 1
Relative vapour density Vapour density :	Not stated.
Particle characteristics The mixture does not contain nanoforms.	
9.2. Other information VOC (g/l) :	582.08
9.2.1. Information with regard to physical No data available.	hazard classes
9.2.2. Other safety characteristics	

No data available.

SECTION 10 : STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

This mixture is stable under the recommended handling and storage conditions in section 7.

10.3. Possibility of hazardous reactions

When exposed to high temperatures, the mixture can release hazardous decomposition products, such as carbon monoxide and dioxide, fumes and nitrogen oxide.

10.4. Conditions to avoid

Any apparatus likely to produce a flame or to have a metallic surface at high temperature (burners, electric arcs, furnaces etc.) must not be allowed on the premises.

Avoid :

- accumulation of electrostatic charges.
- heating
- heat
- flames and hot surfaces

10.5. Incompatible materials

Keep away from :

- combustible material

10.6. Hazardous decomposition products

The thermal decomposition may release/form :

- carbon monoxide (CO)
- carbon dioxide (CO2)
- nitrogen oxide (NO)
- nitrogen dioxide (NO2)



SECTION 11 : TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Harmful if swallowed.

May cause irreversible damage to the skin; namely inflammation of the skin or the formation of erythema and eschar or oedema following exposure up to four hours.

Splashes in the eyes may cause irritation and reversible damage

11.1.1. Substances

No toxicological data available for the substances.

11.1.2. Mixture

No toxicological data available for the mixture.

11.2. Information on other hazards

SECTION 12 : ECOLOGICAL INFORMATION

Very toxic to aquatic life with long lasting effects.

The product must not be allowed to run into drains or waterways.

12.1. Toxicity

12.1.2. Mixtures

No aquatic toxicity data available for the mixture.

- 12.2. Persistence and degradability
- No data available.

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

No data available.

12.6. Endocrine disrupting properties

No data available.

12.7. Other adverse effects

No data available.

German regulations concerning the classification of hazards for water (WGK, AwSV Annex I, KBws) :

WGK 3 : Extremely hazardous for water.

SECTION 13 : DISPOSAL CONSIDERATIONS

Proper waste management of the mixture and/or its container must be determined in accordance with Directive 2008/98/EC.

13.1. Waste treatment methods

Do not pour into drains or waterways.

Waste :

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

Soiled packaging :

Empty container completely. Keep label(s) on container.

Give to a certified disposal contractor.



SECTION 14 : TRANSPORT INFORMATION

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2023 - IMDG 2022 [41-22] - ICAO/IATA 2023 [64]).

14.1. UN number or ID number

1993

14.2. UN proper shipping name

UN1993=FLAMMABLE LIQUID, N.O.S. (ethanol)

14.3. Transport hazard class(es)

- Classification :



3

14.4. Packing group

Π

14.5. Environmental hazards

- Environmentally hazardous material :



14.6. Special precautions for user

ADR/RID	Class	Code	Pack gr.	Label	Ident.	LQ	Provis.	EQ	Cat.	Tunnel
	3	F1	II	3	33	1 L	274 601 640D	E2	2	D/E
IMDG	Class	2°Label	Pack gr.	LQ	EMS	Provis.	EQ	Stowage	Segregation	
								Handling		
	3	-	II	1 L	F-E. S-E	274	E2	Category B	-	
										-
IATA	Class	2°Label	Pack gr.	Passager	Passager	Cargo	Cargo	note	EQ	
	3	-	II	353	5 L	364	60 L	A3	E2	

A3

E2

Y341 For limited quantities, see part 2.7 of the OACI/IATA and chapter 3.4 of the ADR and IMDG.

1 L

For excepted quantities, see part 2.6 of the OACI/IATA and chapter 3.5 of the ADR and IMDG.

Marine pollutant (IMDG 3.1.2.9):(cuivre (ii) nitrate 3 h2o)

14.7. Maritime transport in bulk according to IMO instruments

Π

No data available.

SECTION 15: Regulatory information

3

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

Classification and labelling information included in section 2:

The following regulations have been used:

- EU Regulation No. 1272/2008 amended by EU Regulation No. 2022/692 (ATP 18)

Container information:

No data available.



Restrictions applied under Title VIII of Regulation (EC) No. 1907/2006 (REACH):

The mixture does not contain any substance restricted under Annex XVII of Regulation (EC) No. 1907/2006 (REACH): https://echa.europa.eu/substances-restricted-under-reach.

Explosives precursors :

The mixture does not contain any substance subject to Regulation (EU) 2019/1148 on the marketing and use of explosives precursors.

Particular provisions :

No data available.

German regulations concerning the classification of hazards for water (WGK, AwSV Annex I, KBws) :

WGK 3 : Extremely hazardous for water.

15.2. Chemical safety assessment

No data available.

SECTION 16 : OTHER INFORMATION

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.

The mixture must not be used for other uses than those specified in section 1 without having first obtained written handling instructions. It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.

The information in this safety data sheet must be regarded as a description of the safety requirements relating to the mixture and not as a guarantee of the properties thereof.

Wording of the phrases mentioned in section 3 :

H225	Highly flammable liquid and vapour.
H272	May intensify fire; oxidiser.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Abbreviations and acronyms :

REACH : Registration, Evaluation, Authorization and Restriction of Chemical Substances.

DNEL : Derived No-Effect Level

PNEC : Predicted No-Effect Concentration

UFI : Unique formulation identifier.

STEL : Short-term exposure limit

TWA : Time Weighted Averages

TMP : French Occupational Illness table

TLV : Threshold Limit Value (exposure)

AEV : Average Exposure Value.

ADR : European agreement concerning the international carriage of dangerous goods by Road.

IMDG : International Maritime Dangerous Goods.

IATA : International Air Transport Association.

ICAO : International Civil Aviation Organisation

RID : Regulations concerning the International carriage of Dangerous goods by rail.

WGK : Wassergefahrdungsklasse (Water Hazard Class).

GHS02 : Flame

GHS03 : Flame over circle

GHS07 : Exclamation mark

GHS09 : Environment

PBT: Persistent, bioaccumulable and toxic.

vPvB : Very persistent, very bioaccumulable.

SVHC : Substances of very high concern.