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

1.1. Product Identifiers

Product name : Folin & Ciocalteu's phenol reagent
Type of product : Chemical substance
Product grade : LR, AR/ACS, AR, Special grade
CAS No :

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

Identified uses : Reagent for analysis

1.3. Details of the supplier of the safety data sheet

RYZE CHEMIE PRIVATE LIMITED
Gami Industrial Park, Unit.13, Second Floor, C Block,
Plot No.C-39-A, TTC Industrial area, Navi Mumbai,
Thane, Maharashtra-400705
Safety@ryzechemie.com

1.4. Emergency Telephone Number : +91- 99-3006-04-04

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Corrosive to metals, Category 1	H290: May be corrosive to metals.
Skin corrosion, Category 1	H314: Causes severe skin burns and eye damage.
Serious eye damage, Category 1	H318: Causes serious eye damage.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements :

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.

Precautionary statements :

Prevention:

P234	Keep only in original packaging.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P363	Wash contaminated clothing before reuse.

Hazardous components which must be listed on the label:

Hydrochloric Acid
phosphoric acid

Reduced Labelling (<= 125 ml)

Hazard pictograms :



Signal word	Danger
Hazard Statements	
H314	Causes severe skin burns and eye damage.
Precautionary Statements	
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.

P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P363	Wash contaminated clothing before reuse.
Supplemental Hazard Statements	none

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
lithium sulphate	10377-48-7 233-820-4 01-2119968668-14-XXXX	Acute Tox. 4; H302 Eye Irrit. 2; H319 --- Acute toxicity estimate Acute oral toxicity: 613 mg/kg	>= 10 - < 20
Hydrochloric Acid	7647-01-0 231-595-7 017-002-01-X 01-2119484862-27-XXXX	Met. Corr. 1; H290 Skin Corr. 1B; H314 Eye Dam. 1; H318 STOT SE 3; H335 (Respiratory system) --- specific concentration limit	>= 5 - < 10

		Met. Corr. 1; H290 >= 0,1 % Skin Corr. 1B; H314 >= 25 % Skin Irrit. 2; H315 10 - < 25 % Eye Irrit. 2; H319 10 - < 25 % STOT SE 3; H335 >= 10 %	
Disodium wolframate dihydrate	10213-10-2 236-743-4 *	Acute Tox. 4; H302	>= 1 - < 10
phosphoric acid	7664-38-2 231-633-2 015-011-00-6 01-2119485924-24-XXXX	Met. Corr. 1; H290 Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318 --- specific concentration limit Skin Corr. 1B; H314 >= 25 % Skin Irrit. 2; H315 10 - < 25 % Eye Irrit. 2; H319 10 - < 25 % Met. Corr. 1; H290 >= 1 % --- Acute toxicity estimate Acute oral toxicity: 1.250 mg/kg	>= 5 - < 10
Bromine	7726-95-6 231-778-1 035-001-00-5 *	Acute Tox. 1; H330 Skin Corr. 1A; H314 Eye Dam. 1; H318 Aquatic Acute 1; H400 --- M-Factor (Acute aquatic toxicity): 10	>= 0,1 - < 0,25

*A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, or the annual tonnage does not require a registration.

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice	:	First aiders need to protect themselves. Show this safety data sheet to the doctor in attendance.
If inhaled	:	After inhalation: fresh air. Call in physician.
In case of skin contact	:	In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.
In case of eye contact	:	After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.
If swallowed	:	After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting	:	Not combustible. Ambient fire may liberate hazardous vapours.
Hazardous combustion	:	Sulphur oxides

products

Oxides of phosphorus
Hydrogen chloride gas
Sodium oxides
Lithium oxides
Tungsten oxide
Molybdenum oxides

5.3 Advice for firefighters

Special protective equipment for fire-fighters : Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information : Suppress (knock down) gases/vapours/mists with a water spray jet.
Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Advice for non-emergency personnel:
Do not breathe vapours, aerosols.
Avoid substance contact.
Ensure adequate ventilation.
Evacuate the danger area, observe emergency procedures, consult an expert.
Render harmless: cause to react with excess of sodium thiosulphate solution.

For personal protection see section 8.

6.2 Environmental precautions

Environmental precautions : Do not let product enter drains.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up with liquid-absorbent and neutralising material. Dispose of properly. Clean up affected area.

6.4 Reference to other sections

For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Hygiene measures : Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after

working with substance.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : No metal containers.

Further information on storage conditions : Tightly closed.

Storage class (TRGS 510) : 8B, Non-combustible, corrosive hazardous materials

Recommended storage temperature : Recommended storage temperature see product label.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006

Substance name	End Use	Exposure routes	Potential health effects	Value
Hydrochloric Acid	Worker DNEL, acute	Inhalation	Local effects	15 mg/m3
	Worker DNEL, longterm	Inhalation	Local effects	8 mg/m3

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006

Substance name	Environmental Compartment	Value
Hydrochloric Acid	Fresh water	0,036 mg/l
	Marine water	0,036 mg/l
	Aquatic intermittent release	0,045 mg/l
	Sewage treatment plant	0,036 mg/l

8.2 Exposure controls

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Tightly fitting safety goggles

Hand protection

Material	:	Nitrile rubber
Break through time	:	480 min
Glove thickness	:	0,11 mm
Protective index	:	Full contact
Manufacturer	:	Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Material	:	Nitrile rubber
Break through time	:	480 min
Glove thickness	:	0,11 mm
Protective index	:	Splash contact
Manufacturer	:	Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Manufacturer	:	data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

Remarks	:	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it. If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Skin and body protection	:	Acid-resistant protective clothing

Respiratory protection	:	required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.
Recommended Filter type:	:	Filter type ABEK

The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls

Advice	:	Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	liquid
Colour	:	yellow
Odour	:	pungent
Melting point	:	No data available
Boiling point	:	No data available
Flammability	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Flash point	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
pH	:	< 0,5 (20 °C)
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Flow time	:	No data available
Solubility(ies)		
Water solubility	:	soluble
Partition coefficient: n-octanol/water	:	No data available
Vapour pressure	:	No data available
Relative density	:	No data available
Density	:	1,240 g/cm3 (20 °C)

Relative vapour density	:	No data available

9.2 Other information

Explosives	:	Not classified as explosive.
Oxidizing properties	:	none
Burning rate	:	No data available
Evaporation rate	:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Risk of ignition or formation of inflammable gases or vapours with: Metals metal alloys Possible formation of: Hydrogen Violent reactions possible with: Bases metallic oxides

10.4 Conditions to avoid

Conditions to avoid	:	no information available

10.5 Incompatible materials

Materials to avoid	:	Strong oxidizing agents Metals Metals

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Mixture

Acute toxicity
Oral: No data available
Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract
Acute toxicity estimate Inhalation - 4 h - > 20 mg/l - vapour(Calculation method)

Dermal: No data available

Skin corrosion/irritation
Remarks: No data available

Serious eye damage/eye irritation
Remarks: No data available
Remarks: Mixture causes serious eye damage.
Risk of blindness!

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

11.2 Additional Information

Endocrine disrupting properties

Product:

Assessment	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Large doses of lithium ion have caused dizziness and prostration, and can cause kidney damage if sodium intake is limited. Dehydration, weight loss, dermatological effects, and thyroid disturbances have been reported. Central nervous system effects that include slurred speech, blurred vision, sensory loss, ataxia, and convulsions may occur. Diarrhea, vomiting, and neuromuscular effects such as tremor, clonus, and hyperactive reflexes may occur as a result of repeated exposure to lithium ion., Lithium and its compounds are

possible teratogens by analogy to lithium carbonate which has equivocal human teratogenic data and positive animal teratogenic data.
Exposure to high concentrations can cause:
burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Components

lithium sulphate

Acute toxicity
LD50 Oral - Rat - 613 mg/kg
Remarks: (ECHA)
Acute toxicity estimate Oral - 613 mg/kg
(ATE value derived from LD50/LC50 value)
LC50 Inhalation - Rat - male and female - 4 h - > 2 mg/l - dust/mist
(OECD Test Guideline 403)
The value is given in analogy to the following substances: Lithium carbonate
LD50 Dermal - Rabbit - male and female - > 3.000 mg/kg
(OECD Test Guideline 402)
The value is given in analogy to the following substances: Lithium carbonate

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation - 4 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Eye irritation
(OECD Test Guideline 405)
Remarks: (ECHA)
The value is given in analogy to the following substances: Lithium carbonate

Respiratory or skin sensitization
Buehler Test - Guinea pig
Result: negative
(OECD Test Guideline 406)
The value is given in analogy to the following substances: Lithium carbonate

Germ cell mutagenicity
Test Type: Ames test
Test system: Escherichia coli/Salmonella typhimurium
Result: negative
The value is given in analogy to the following substances: Lithium hydroxide
Test Type: Chromosome aberration test in vitro
Test system: Human lymphocytes
Result: negative
The value is given in analogy to the following substances: Lithium hydroxide
Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Result: negative
The value is given in analogy to the following substances: Lithium hydroxide

Carcinogenicity
No data available

Reproductive toxicity
Lithium and its compounds are possible teratogens by analogy to lithium carbonate which has equivocal human teratogenic data and positive animal teratogenic data.

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Hydrochloric Acid

Acute toxicity
Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.
Inhalation: Cough Difficulty in breathing
Symptoms: mucosal irritations, Cough, Shortness of breath, Inhalation may lead to the formation of oedemas in the respiratory tract., Possible damages:, damage of respiratory tract, tissue damage
Dermal: No data available

Skin corrosion/irritation
Skin - reconstructed human epidermis (RhE)
Result: Corrosive
(OECD Test Guideline 431)

Serious eye damage/eye irritation
Eyes - Bovine cornea
Result: Causes serious eye damage. - 10 min
(OECD Test Guideline 437)

Respiratory or skin sensitization
Maximisation Test - Guinea pig
Result: negative
(OECD Test Guideline 406)

Germ cell mutagenicity
Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Result: Positive results were obtained in some in vitro tests.
Remarks: (ECHA)
Test Type: mitotic recombination assay
Test system: Saccharomyces cerevisiae
Result: negative
Remarks: (ECHA)
Test Type: Ames test
Test system: mouse lymphoma cells
Result: positive
Remarks: (ECHA)

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
May cause respiratory irritation. - Respiratory system
Acute oral toxicity - If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.
Acute inhalation toxicity - mucosal irritations, Cough, Shortness of breath, Inhalation may lead to the formation of oedemas in the respiratory tract., Possible damages:, damage of respiratory tract, tissue damage

Specific target organ toxicity - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard
No aspiration toxicity classification

Disodium wolframate dihydrate

Acute toxicity
Oral: absorption
LD50 Oral - Rat - male and female - 1.453 mg/kg
(OECD Test Guideline 401)
The value is given in analogy to the following substances: Sodium tungstate
LC50 Inhalation - Rat - male and female - 4 h - > 5,01 mg/l - dust/mist
(OECD Test Guideline 403)
LD50 Dermal - Rat - male and female - > 2.000 mg/kg
(OECD Test Guideline 402)

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation - 4 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: slight irritation
(OECD Test Guideline 405)

Respiratory or skin sensitization
Maximisation Test - Guinea pig
Result: negative
(OECD Test Guideline 406)
The value is given in analogy to the following substances: Sodium tungstate

Germ cell mutagenicity
Test Type: Mutagenicity (mammal cell test): chromosome aberration.
Test system: Chinese hamster ovary cells
Result: negative
Test Type: In vitro mammalian cell gene mutation test
Test system: Mouse lymphoma test
Result: negative
Test Type: Ames test
Test system: Escherichia coli/Salmonella typhimurium
Result: negative
Method: OECD Test Guideline 474
Species: Mouse - male - Bone marrow
Result: negative

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

phosphoric acid

Acute toxicity
LD50 Oral - Rat - 1.250 mg/kg
Remarks: Lungs, Thorax, or Respiration:Acute pulmonary edema.
Liver:Changes in liver weight.
(RTECS)
Acute toxicity estimate Oral - 1.250 mg/kg
(ATE value derived from LD50/LC50 value)
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Causes burns. - 24 h
Remarks: (ECHA)
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Serious eye damage/eye irritation
Remarks: Causes serious eye damage.
Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
Test Type: Ames test
Test system: Escherichia coli/Salmonella typhimurium
Result: negative
Test Type: Mutagenicity (mammal cell test): chromosome aberration.
Test system: Human lymphocytes
Result: negative
Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Result: negative

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure

Aspiration hazard
No data available

Bromine

Acute toxicity
LD50 Oral - Rat - 2.600 mg/kg
LC50 Inhalation - Mouse - female - 4 h - 0,1427 mg/l - vapour
Remarks: (ECHA)
Dermal: No data available

Skin corrosion/irritation
Remarks: Causes severe burns.
Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Serious eye damage/eye irritation
Remarks: Causes serious eye damage.

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
In vivo tests did not show mutagenic effects
Test Type: Ames test
Test system: Escherichia coli/Salmonella typhimurium
Result: positive
Test system: mouse lymphoma cells
Result: positive
Method: US-EPA
Species: Mouse - male and female - Bone marrow
Result: negative

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish	:	Remarks: No data available

Components:

lithium sulphate:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 30,3 mg/l End point: mortality Exposure time: 96 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 203 GLP: yes The value is given in analogy to the following substances: Lithium carbonate
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 33,2 mg/l End point: Immobilization Exposure time: 48 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 202 GLP: yes The value is given in analogy to the following substances: Lithium carbonate
Toxicity to algae/aquatic plants	:	ErC50 (Desmodesmus subspicatus (green algae)): > 400 mg/l Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes
Toxicity to microorganisms	:	EC50 (activated sludge): 180,8 mg/l Exposure time: 3 h Test Type: static test Method: OECD Test Guideline 209 GLP: yes

Toxicity to fish (Chronic toxicity)	:	NOEC: 17,35 mg/l End point: mortality Exposure time: 34 d Species: Danio rerio (zebra fish) Test Type: semi-static test Analytical monitoring: yes Method: OECD Test Guideline 210 GLP: yes
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 1,7 mg/l End point: mortality Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: semi-static test Analytical monitoring: yes Method: OECD Test Guideline 211 GLP: yes The value is given in analogy to the following substances: lithium

Ecotoxicology Assessment

Chronic aquatic toxicity	:	This product has no known ecotoxicological effects.

Hydrochloric Acid:

Toxicity to fish	:	LC50 (Gambusia affinis (Mosquito fish)): 282 mg/l Exposure time: 96 h Remarks: (IUCLID)

Disodium wolframate dihydrate:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): > 200 mg/l Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 203 GLP: yes
Toxicity to daphnia and other aquatic invertebrates	:	(Daphnia magna (Water flea)): > 163 mg/l Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202 GLP: yes
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): > 17,7 mg/l Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 GLP: yes Remarks: The value is given in analogy to the following substances: The value is given in analogy to the following

substances: Sodium tungstate

EC10 (Pseudokirchneriella subcapitata (green algae)): 5,76 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes
Remarks: The value is given in analogy to the following substances:
The value is given in analogy to the following substances: Sodium tungstate

Toxicity to microorganisms : (activated sludge): > 1.000 mg/l
Exposure time: 30 min
Test Type: static test
Method: OECD Test Guideline 209
GLP: yes

Toxicity to fish (Chronic toxicity) : NOEC: > 9,8 mg/l
Exposure time: 38 d
Species: Danio rerio (zebra fish)
Test Type: flow-through test
Method: OECD Test Guideline 210
GLP: yes
Remarks: The value is given in analogy to the following substances:
The value is given in analogy to the following substances: Sodium tungstate

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: >= 44,2 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: static test
Method: OECD Test Guideline 211
GLP: yes

Ecotoxicology Assessment

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

phosphoric acid:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
Exposure time: 72 h

Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

NOEC (Desmodesmus subspicatus (green algae)): 100 mg/l
End point: Growth inhibition
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

Toxicity to microorganisms : EC50 (activated sludge): > 1.000 mg/l
Exposure time: 3 h
Test Type: static test
Method: OECD Test Guideline 209
GLP: yes

Bromine:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 0,54 mg/l
End point: mortality
Exposure time: 96 h
Test Type: static test
Remarks: (ECOTOX Database)

M-Factor (Acute aquatic toxicity) :

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,46 mg/l
End point: mortality
Exposure time: 48 h
Species: Daphnia magna (Water flea)
Test Type: static test
Remarks: (ECOTOX Database)

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Components:

lithium sulphate:

Biodegradability : Remarks: The methods for determining the biological

degradability are not applicable to inorganic substances.

Hydrochloric Acid:

Biodegradability : Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

Disodium wolframate dihydrate:

Biodegradability : Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

phosphoric acid:

Biodegradability : Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

Bromine:

Biodegradability : Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No data available

Components:

lithium sulphate:

Partition coefficient: n-octanol/water : Remarks: Not applicable for inorganic substances

Hydrochloric Acid:

Partition coefficient: n-octanol/water : Remarks: Not applicable for inorganic substances

Disodium wolframate dihydrate:

Partition coefficient: n-octanol/water : Remarks: Not applicable for inorganic substances

phosphoric acid:

Partition coefficient: n-octanol/water : Remarks: Not applicable for inorganic substances

Bromine:

Partition coefficient: n-octanol/water	:	Remarks: Not applicable for inorganic substances

12.4 Mobility in soil

Product:

Stability in soil	:	Remarks: No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Components:

Hydrochloric Acid:

Assessment	:	Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

phosphoric acid:

Assessment	:	PBT/vPvB: Not applicable for inorganic substances

12.6 Endocrine disrupting properties

Product:

Assessment	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Components:

Hydrochloric Acid:

Additional ecological information	:	May be harmful to aquatic organisms due to the shift of the pH. Do not empty into drains. Harmful effect due to pH shift. Discharge into the environment must be avoided.

Disodium wolframate dihydrate:

Additional ecological information	:	Discharge into the environment must be avoided.

phosphoric acid:

Additional ecological information : May be harmful to aquatic organisms due to the shift of the pH.

Bromine:

Additional ecological information : Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

SECTION 14: Transport information

14.1 UN number or ID number

ADR : UN 3264

IMDG : UN 3264

IATA : UN 3264

14.2 UN proper shipping name

ADR : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Hydrochloric Acid, phosphoric acid)

IMDG : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Hydrochloric Acid, phosphoric acid)

IATA : Corrosive liquid, acidic, inorganic, n.o.s. (Hydrochloric Acid, phosphoric acid)

14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADR	:	
IMDG	:	
IATA	:	

14.4 Packing group

ADR

Packing group : III

Classification Code	:	C1
Hazard Identification Number	:	80
Labels	:	8
Tunnel restriction code	:	(E)

IMDG

Packing group	:	III
Labels	:	8
EmS Code	:	F-A, S-B

IATA (Cargo)

Packing instruction (cargo aircraft)	:	
Packing instruction (LQ)	:	Y841
Packing group	:	III
Labels	:	Class 8 - Corrosive substances

IATA_P (Passenger)

Packing instruction (passenger aircraft)	:	
Packing instruction (LQ)	:	Y841
Packing group	:	III
Labels	:	Class 8 - Corrosive substances

14.5 Environmental hazards

ADR

Environmentally hazardous	:	no

IMDG

Marine pollutant	:	no

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 3 Number on list 75 If you intend to use this product as tattoo ink, please contact your vendor.

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
	:	Not applicable
	:	Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.		Not applicable

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements

H290	:	May be corrosive to metals.
H302	:	Harmful if swallowed.
H314	:	Causes severe skin burns and eye damage.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.
H330	:	Fatal if inhaled.
H335	:	May cause respiratory irritation.
H400	:	Very toxic to aquatic life.

Abbreviation and Acronyms

CAS - Chemical Abstracts Service
TSCA - United States Toxic Substances Control Act Section 8(b)Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non- Domestic Substances List
PICCS - Philippines Inventory of Chemicals and Chemical Substances
ENCS - Japanese Existing and New Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
AICS - Australian Inventory of Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
NZIoC - New Zealand Inventory of Chemicals
WEL - Workplace Exposure Limit
TWA - Time Weighted Average
ACGIH - American Conference of Governmental Industrial Hygienists
IARC - International Agency for Research on Cancer
DNEL - Derived No Effect Level
PNEC - Predicted No Effect Concentration
RPE - Respiratory Protective Equipment
LD50 - Lethal Dose 50%
LC50 - Lethal Concentration 50%
EC50 - Effective Concentration 50%
NOEC - No Observed Effect Concentration
POW- Partition coefficient Octanol:Water
PBT - Persistent, Bioaccumulative, Toxic

vPvB - very Persistent, very Bioaccumulative
ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
MARPOL - International Convention for the Prevention of Pollution from Ships
OECD - Organization for Economic Co-operation and Development
ATE - Acute Toxicity Estimate
BCF - Bioconcentration factor
VOC - (Volatile Organic Compound)

Disclaimer: The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

Ryze Chemie will not be held liable for any damage resulting from handling or from contact with the above product

End of safety data sheet