Safety data sheet

according to Regulation (EC) No 1907/2006, Article 31

Printing date 24.11.2025 Version number 5 (replaces version 4) Revision: 19.11.2025

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

· **1.1 Product identifier**

· **Trade name: R-PO4/1-1A**

· **Article number:** 827520

· **Description:** Reagent solution for phosphate analyzer

· **1.2 Relevant identified uses of the substance or mixture and uses advised against:**

· **Product category:** PC21 Laboratory chemicals
· **Process category:** PROC15 Use as laboratory reagent
· **Application of the substance / the preparation:** Chemical analytics

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**
Xylem Analytics Germany GmbH
WTW
Am Achalaich 11
82362 Weilheim
Germany
Tel. +49 881 183-0

· **Further information obtainable from:** E-mail: Info.WTW@xylem.com

· **1.4 Emergency telephone number:** Chemtrec: (USA & Canada) 800-424-9300 (International) 001 703-527-3887

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008:**

Met. Corr.1 H290 May be corrosive to metals.
Skin Corr. 1A H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

· **2.2 Label elements:**

· **Labelling according to Regulation (EC) No 1272/2008:**
The product is classified and labelled according to the CLP regulation.

· **Hazard pictograms:**



GHS05

· **Signal word:** Danger

· **Hazard-determining components of labelling:**
sulphuric acid

· **Hazard statements:**
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

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· **Precautionary statements:**

P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

· **Additional information:**
Product contains: Restricted explosives precursors. Making available, introduction, possession and use according to Regulation (EU) 2019/1148, Article 5 (1) and (3).

· **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.

Toxicological information: The substance/mixture does not contain components with endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1% or more.

Environmental information: The substance/mixture does not contain components with endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1% or more.

SECTION 3: Composition/information on ingredients

· **3.2 Mixtures**

· **Description:**
Mixture of substances listed below with nonhazardous additions.
Water, sulphuric acid, ammonium monovanadate

· **Dangerous components:**

CAS: 7664-93-9 EINECS: 231-639-5 Index number: 016-020-00-8	sulphuric acid Skin Corr. 1A, H314 Specific concentration limits: Skin Corr. 1A; H314: C ≥ 15 % Skin Irrit. 2; H315: 5 % ≤ C < 15 % Eye Irrit. 2; H319: 5 % ≤ C < 15 %	15 - < 20%
CAS: 7803-55-6 EINECS: 232-261-3	ammonium monovanadate Acute Tox. 3, H301; Acute Tox. 4, H332; Eye Irrit. 2, H319; STOT SE 3, H335	0.1 - < 1%

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

· **4.1 Description of first aid measures**

· **After inhalation:**
Supply fresh air.
Consult a doctor.

· **After skin contact:**
Wash skin with water or shower.
Take off immediately all contaminated clothing and wash it before reuse.
Consult a doctor.

· **After eye contact:**
Rinse opened eye for at least 15 minutes under running water.
Consult an ophthalmologist immediately.
Remove contact lenses.

· **After swallowing:**
Make victim drink water immediately (2 glasses at most).

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Call a doctor immediately.
Do not induce vomiting (risk of perforation)
Do not attempt to neutralize.

· **4.2 Most important symptoms and effects, both acute and delayed**
The most important known symptoms and effects are described on the labelling (see section 2.2) and/or in chapter 11.

· **4.3 Indication of any immediate medical attention and special treatment needed** No further relevant information available.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents:** The product is not flammable. Extinguishing agent to suit environment.
· **For safety reasons unsuitable extinguishing agents:**
There are no extinguishing agent restrictions for this substance/mixture.

· **5.2 Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Sulphur oxides (SOx)
Vanadium oxide compounds

· **5.3 Advice for firefighters**
· **Protective equipment:**
Stay in the danger zone only with self-contained breathing apparatus. Avoid skin contact by keeping a safe distance or wearing suitable protective clothing.
Wear chemical protective clothing in the case of heavy toxic load.
· **Additional information** Do not allow extinguishing water to enter the surface water or groundwater system.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Wear personal protective equipment (see section 8).

· **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

· **6.3 Methods and material for containment and cleaning up:**
Observe possible material restrictions (see information in section 7 or section 10).
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose of the material collected according to regulations.
Wash off residuals with water.

· **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling** Wear personal protective equipment (see section 8)
· **Information about fire - and explosion protection:** No special measures required.

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Requirements to be met by storerooms and receptacles:** Do not use metal containers.
· **Information about storage in one common storage facility:** No special requirements.
· **Further information about storage conditions:**
Keep container tightly sealed.
Recommended storage temperature: 15 - 25 °C

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· **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**	
CAS: 7664-93-9 sulphuric acid	
IOELV	Long-term value: 0.05 mg/m³

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Individual protection measures, such as personal protective equipment**

· **General protective and hygienic measures:**
Avoid contact with the eyes and skin.
Do not inhale gases / fumes / aerosols.
Take off contaminated clothing and wash it before reuse.
Wash hands before breaks and at the end of work.

· **Respiratory protection:**
Use suitable respiratory protective device only when aerosol or mist is formed.
Recommended filter type: Combination filter E-P2

· **Hand protection** Protective gloves

· **Material of gloves**
- For full contact:
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.4 mm
Breakthrough time: 480 min

- For splash contact:
Chloroprene rubber, CR
Recommended material thickness: ≥ 0.65 mm
Breakthrough time: 480 min

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Eye/face protection** Safety goggles with side protection

· **Body protection:** Acid resistant protective clothing

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Physical state**	Liquid
· **Colour:**	Light yellow
· **Odour:**	Odourless
· **Melting point/freezing point:**	No data available.
· **Boiling point or initial boiling point and boiling range**	100 °C
· **Flammability**	Product is not flammable.
· **Flash point:**	Not applicable.
· **pH at 20 °C**	0
· **Viscosity:**	
· **Kinematic viscosity**	No data available.

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· **Dynamic viscosity:**	No data available.
· **Solubility**	
· **water:**	Fully miscible.
· **Vapour pressure at 20 °C:**	23 hPa
· **Density and/or relative density**	
· **Density at 20 °C:**	1.25 g/cm³
· **9.2 Other information**	
· **Important information on protection of health and environment, and on safety.**	
· **Ignition temperature:**	Product is not selfigniting.
· **Explosive properties:**	Product does not present an explosion hazard.
· **Information with regard to physical hazard classes**	Void
· **Corrosive to metals**	May be corrosive to metals.

SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.

· **10.2 Chemical stability**

· **Thermal decomposition / conditions to be avoided:**
The product is chemically stable under normal ambient conditions (room temperature).
Do not heat.

· **10.3 Possibility of hazardous reactions** Formation of hydrogen possible with metals and alloys (risk of explosion).

· **10.4 Conditions to avoid** No further relevant information available.

· **10.5 Incompatible materials:**
Alkalis
Metals

· **10.6 Hazardous decomposition products:** In case of fire: See section 5.

SECTION 11: Toxicological information

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

· **Acute toxicity**
No quantitative toxicity data are available for this product.
Based on available data, the classification criteria are not met.

· **Acute toxicity estimate of the mixture (ATE) - Calculation method:**

· **LD/LC50 values relevant for classification:**

ATE (Acute Toxicity Estimates)		
Oral	LD50	92400 mg/kg (Rat)

CAS: 7664-93-9 sulphuric acid		
Oral	LD50	2140 mg/kg (Rat) (ECHA)
Inhalative	LC50	510 mg/m³, 2 h (Rat) (IUCLID)

CAS: 7803-55-6 ammonium monovanadate		
Oral	LD50	169 mg/kg (Rat) (OECD)
Dermal	LD50	> 2500 mg/kg (Rat) (OECD)
Inhalative	LC50	2.5 mg/l, 4 h (Rat) (OECD)

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· **Primary irritant effect:**
· **Skin corrosion/irritation** Causes severe skin burns and eye damage.
· **Serious eye damage/irritation** Causes serious eye damage.
· **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
· **Carcinogenicity** Based on available data, the classification criteria are not met.
· **Reproductive toxicity** Based on available data, the classification criteria are not met.
· **STOT-single exposure** Based on available data, the classification criteria are not met.
· **STOT-repeated exposure** Based on available data, the classification criteria are not met.
· **Aspiration hazard** Based on available data, the classification criteria are not met.

· **Additional toxicological information:**
· **Acute effects (acute toxicity, irritation and corrosivity):**
If ingested, severe burns of the mouth and throat, as well as a danger of the perforation of the oesophagus and the stomach.

· **11.2 Information on other hazards**

· **Endocrine disrupting properties**
The substance/mixture does not contain components that have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1 % or more have endocrine disrupting properties.

SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**	
CAS: 7664-93-9 sulphuric acid	
EC50 (static)	> 100 mg/l, 48 h (Daphnia magna) (OECD 202)
ErC50 (static)	> 100 mg/l, 72 h (Desmodesmus subspicatus) (OECD 201)
IC50	0.16 – 0.59 mg/l, 96 h (Chlorella vulgaris) (IUCLID)
CAS: 7803-55-6 ammonium monovanadate	
LC50	2.6 mg/l, 96 h (Ictalurus catus) (ECOTOX)

· **12.2 Persistence and degradability** No further relevant information available.

· **12.3 Bioaccumulative potential** No further relevant information available.

· **12.4 Mobility in soil** No further relevant information available.

· **12.5 Results of PBT and vPvB assessment**
This product does not contain components classified as persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) in concentrations of 0.1% or higher.

· **12.6 Endocrine disrupting properties**
The substance/mixture does not contain components that have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1 % or more have endocrine disrupting properties.

· **12.7 Other adverse effects**
· **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water

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Do not allow product to reach ground water, water course or sewage system.
Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

· **Additional ecological information:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**

· **Recommendation**
Disposal must comply with the relevant local regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose the special waste.

· **Uncleaned packaging:**

· **Recommendation:**
Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.
Packagings that may not be cleansed are to be disposed of in the same manner as the product.

· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

· **14.1 UN number or ID number**	
· **ADR/RID, IMDG, IATA**	UN2796
· **14.2 UN proper shipping name**	
· **IMDG, IATA**	SULPHURIC ACID
· **14.3 Transport hazard class(es)**	
· **ADR/RID, IMDG, IATA**	
· **Class**	8 Corrosive substances.
· **Label**	8
· **14.4 Packing group**	
· **ADR/RID, IMDG, IATA**	II
· **14.5 Environmental hazards:**	
· **Marine pollutant:**	No
· **14.6 Special precautions for user**	Warning: Corrosive substances.
· **Hazard identification number (Kemler code):**	80
· **EMS Number:**	F-A,S-B
· **Segregation groups**	(SGG1) Acids
· **Stowage Category**	B
· **14.7 Maritime transport in bulk according to IMO instruments**	Not applicable.

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· **ADR/RID**

· **Limited quantities (LQ)**	1L
· **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **Transport category**	2
· **Tunnel restriction code**	E

· **UN "Model Regulation":** UN 2796 SULPHURIC ACID, 8, II

SECTION 15: Regulatory information

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

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I** None of the ingredients is listed.

· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3

· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

· **REGULATION (EU) 2019/1148**

· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

CAS: 7664-93-9	sulphuric acid	Limit value: > 15 – ≤ 40 %

· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

· **Regulation (EC) No 273/2004 on drug precursors**

CAS: 7664-93-9	sulphuric acid	3

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

CAS: 7664-93-9	sulphuric acid	3

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

· **Relevant phrases**
H301 Toxic if swallowed.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.

· **Date of previous version:** 23.01.2023

· **Version number of previous version:** 4

· **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organisation
ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods

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IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
ATE: Acute toxicity estimate values
Met. Corr.1: Corrosive to metals – Category 1
Acute Tox. 3: Acute toxicity – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3