

Page 1/10

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 03.07.2023

Version number 7 (replaces version 6)

Revision: 22.10.2022

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

- · 1.1 Product identifier
- · Product name: Pb1 Phosphate HR
- · 1.2 Relevant identified uses of the substance or mixture and uses advised against
- · Application of the substance / the preparation: Reagent for water analysis
- 1.3 Details of the supplier of the safety data sheet
- **Supplier:** Vecom Marine B.V. Mozartlaan 3 NL 3144 NA Maassluis The Netherlands

Telephone: +31 (0)10 5930 210 Email: sales@vecom-marine.com

1.4 Emergency telephone number:

Dutch Poisons Information Center (NVIC): +31 (0)88 755 8000 (24 hour service) Only for the purpose of informing medical personnel in case of acute intoxications. See section 4 on first aid measures.

SECTION 2: Hazards identification

· 2.1 Classification of the substance or mixture

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



GHS05 corrosion

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 GB CLP regulation.
- Hazard pictograms



- · Signal word Danger
- Hazard-determining components of labelling:
- sulphuric acid 26 %
- Hazard statements
- H290 May be corrosive to metals.
- H314 Causes severe skin burns and eye damage.

Precautionary statements

P280 Wear protective gloves / eye protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310 Immediately call a POISON CENTER/doctor.
- P390 Absorb spillage to prevent material damage.

• 2.3 Other hazards Acid burns have to treated immediately, as it may otherwise cause badly curing wounds.

Version number 7 (replaces version 6)

Revision: 22.10.2022

Product name: Pb1 - Phosphate HR

· Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006. Determination of endocrine-disrupting properties

The product does not contain substances with endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

· Description: sulfuric acid solution

 Dangerous components: 		
CAS: 7664-93-9	sulphuric acid	20–30%
EINECS: 231-639-5	🔶 Met. Corr.1, H290; Skin Corr. 1A, H314	
Index No: 016-020-00-8	Specific concentration limits: Skin Corr. 1A; H314: C ≥ 15 %	
Reg.nr.: 01-2119458838-20-XXXX	Skin Irrit. 2; H315: 5 % ≤ C < 15 %	
	Eye Dam. 1; H318: C ≥ 15 %	
	Eye Irrit. 2; H319: 5 % ≤ C < 15 %	

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

- · General information Instantly remove any clothing soiled by the product.
- · After inhalation
- Supply fresh air or oxygen; call for doctor.
- In case of unconsciousness bring patient into stable side position for transport.
- After skin contact

Clean with water and soap. If possible, also wash with polyethylene glycol 400.

- Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.
- After eve contact

Rinse opened eye for several minutes (at least 15 min) under running water.

Call a doctor immediately.

After swallowing

Rinse out mouth and then drink 1-2 glasses of water.

- Call a doctor immediately.
- 4.2 Most important symptoms and effects, both acute and delayed:
- breathing difficulty sickness vomiting diarrhoea

pain

strong caustic effect.

- · Danger Danger of gastric perforation.
- 4.3 Indication of any immediate medical attention and special treatment needed:

If swallowed or in case of vomiting, danger of entering the lungs Subsequent observation for pneumonia and pulmonary oedema

SECTION 5: Firefighting measures

- 5.1 Extinguishing media
- Suitable extinguishing agents Use fire fighting measures that suit the environment.

5.2 Special hazards arising from the substance or mixture The product is not combustible.

Formation of toxic gases is possible during heating or in case of fire. Can be released in case of fire: Sulphur oxides (SOx) Nitrogen oxides (NOx)

5.3 Advice for firefighters

· Protective equipment:

Wear self-contained breathing apparatus.

(Contd. of page 1)

Printing date 03.07.2023

Version number 7 (replaces version 6)

Revision: 22.10.2022

Product name: Pb1 - Phosphate HR

Wear full protective suit. • Additional information

Collect contaminated fire fighting water separately. It must not enter drains.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Ambient fire may liberate hazardous vapours.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away.
- Ensure adequate ventilation Advice for non-emergency personnel:

Wear protective equipment. Keep unprotected persons away. Avoid substance contact. Ensure adequate ventilation

Use breathing protection against the effects of fumes/dust/aerosol.

Advice for emergency responders: Protective equipment: see section 8

· 6.2 Environmental precautions: Do not allow product to reach sewage system or water bodies.

· 6.3 Methods and material for containment and cleaning up:

Ensure adequate ventilation. Use neutralising agent. Neutralize with diluted sodium hydroxide solution. Absorb with liquid-binding material (sand, diatomite, universal binders).

Dispose of contaminated material as waste according to item 13.

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 information on disposal.

SECTION 7: Handling and storage

· 7.1 Precautions for safe handling Open and handle container with care.

· Advice on safe handling:

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

· Hygiene measures:

Do not inhale gases / fumes / aerosols. Do not get in eyes, on skin, or on clothing. Take off immediately all contaminated clothing. Wash hands during breaks and at the end of the work. Do not eat, drink or smoke when using this product.

• 7.2 Conditions for safe storage, including any incompatibilities

- Requirements to be met by storerooms and containers: Store in cool location.
- Information about storage in one common storage facility: Store away from metals.
 Do not store together with alkalis (caustic solutions).
- Store away from flammable substances.
- Further information about storage conditions:

Keep container tightly sealed.

Protect from heat and direct sunlight.

Protect from the effects of light.

Protect from humidity and keep away from water.

• Recommended storage temperature: 20°C +/- 5°C

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

(Contd. on page 4)

(Contd. of page 2)

Version number 7 (replaces version 6)

Revision: 22.10.2022

Product name: Pb1 - Phosphate HR

(Contd. of page 3)

SECTION 8: Exposure	e controls/personal protection	
· 8.1 Control parameter	rs	
Components with limit	values that require monitoring at the workplace:	
CAS: 7664-93-9 sulphur	ic acid	
WEL (Great Britain)	Long-term value: 0.05* mg/m ³	
	*mist: defined as thoracic fraction	
IOELV (European Union)	Long-term value: 0.05 mg/m ³	
• Regulatory Information WEL (Great Britain)• EH4	0/2020	
IOELV (European Union):	: (EU) 2019/1831	
Additional information:	IOELV = Indicative Occupational Exposure Limit	
·DNELs		
CAS: 7664-93-9 sulphur	ic acid	
Inhalative DNEL 0.1 mg/	/m ³ (Worker / acute / local effects)	
0.05 m	g/m ³ (Worker / acute / systemic effects)	
• Recommended monitor Methods for measuremen DIN EN 689.	ing procedures: It of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and	
· PNECs		
CAS: 7664-93-9 sulphur	ic acid	
PNEC 8.8 mg/l (Sewage	treatment plant)	
0.00025 mg/l (Mai	rine water)	
0.0025 mg/l (Fres	h water)	
PNEC 0.002 mg/kg (Mar	ine sediment)	
0.002 mg/kg (Free	sh water sediment)	
· Additional information:	The lists that were valid during the compilation were used as basis.	
· 8.2 Exposure controls	5	
• Engineering measures: Technical measures and See item 7.	appropriate working operations should be given priority over the use of personal protective equipment.	
Individual protection me Protective clothing should substances handled. Eye/face protection Tight Hand protection	easures, such as personal protective equipment to be selected specifically for the workplace, depending on concentration and quantity of the hazardous analy sealed safety glasses.	
Acid resistant gloves Preventive skin protectior After use of gloves apply Material of gloves	ו by use of skin-protecting agents is recommended. skin-cleaning agents and skin cosmetics.	
Recommended thickness • Penetration time of glov Value for the permeation:	of the material: ≥ 0.11 mm re material evel = 1 (< 10 min)	
 • Other skin protection (body protection): Acid resistant protective clothing • Breathing equipment: Use breathing protection against the effects of fumes/dust/aerosol 		
Recommended filter de	vice for short term use: Filter P2	
· Environmental exposure	e controls Do not allow product to reach sewage system or water bodies.	
SECTION 9: Physical	and chemical properties	
9.1 Information on ba	sic physical and chemical properties	
Physical state Form:	Fluid Solution	

- GB ----

FOTIONIO

Version number 7 (replaces version 6)

Revision: 22.10.2022

Product name: Pb1 - Phosphate HR

Printing date 03.07.2023

	(Contd. of page 4)
· Colour:	Colourless
· Odour:	Odourless
· Odour threshold:	Not determined.
 Melting point/Freezing point: 	Not determined.
Boiling point or initial boiling point and boiling rang	e Not determined.
Flammability	The product is not combustible.
Explosive properties:	Product is not explosive.
 Lower and upper explosion limit 	
Lower:	Not determined.
Upper:	Not determined.
Flash point:	Not applicable.
Auto-ignition temperature:	Not applicable.
Decomposition temperature:	Not determined.
pH at 20°C	1
· Kinematic viscosity	Not determined.
Solubility	
Water:	Fully miscible
 Partition coefficient n-octanol/water (log value) 	Not applicable (mixture).
· Vapour pressure:	Not determined.
 Density and/or relative density 	
· Density at 20°C:	1.3 g/cm ³
Relative density:	Not determined.
 Relative gas density 	Not determined.
 Particle characteristics 	Not applicable (liquid).
9.2 Other information	
· Information with regard to physical hazard classes	
· Corrosive to metals	
May be corrosive to metals.	
Metals that are corroded by the substance or mixtur	re Information on incompatible materials can be found in Sections 7 and
	10.
• Other safety characteristics	
• Oxidising properties:	none
Additional information	F •/
Solias content:	<5 %
Solvent content:	
· Organic solvents:	0.0 %
	> bU %

SECTION 10: Stability and reactivity

· 10.1 Reactivity see section 10.3

· 10.2 Chemical stability Stable at ambient temperature (room temperature).

10.3 Possibility of hazardous reactions

Reacts with metals forming hydrogen (Danger of explosion in case of large amounts!)

Corrosive action on metals When diluting, always add acid to water, never vice versa

Diluting or dissolving in water always causes rapid heating

Reacts with peroxides

Reacts with reducing agents

Reacts with halogenated compounds

Reacts with oxidizing agents Reacts with acids and alkali (lyes).

Reacts with ammonia (NH_3).

10.4 Conditions to avoid

strong heating

To avoid thermal decomposition do not overheat.

10.5 Incompatible materials:

metals nitriles

combustible substances

Version number 7 (replaces version 6)

Revision: 22.10.2022

Product name: Pb1 - Phosphate HR

organic solvents

• **10.6 Hazardous decomposition products:** see section 5

SECTION 11: Toxicological information

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

· Acute toxicity Based on available data, the classification criteria are not met.

· LD/LC50 values that are relevant for classification:

CAS: 7664-93-9 sulphuric acid		
Oral LD50 2140 mg/kg (rat)		
(IUCLID)		
Inhalative LC 50 510 mg/m ³ /2h (rat) IUCLID		
 Skin corrosion/irritation Causes severe skin burns and eye damage. Serious eye damage/irritation Causes serious eye damage. Risk of blindness! 		
· 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 (specific target organ toxicity) -single exposure Based on available data, the classification criteria are not met. STOT (specific target organ toxicity) -repeated exposure Based on available data, the classification criteria are not met. 		
· Aspiration hazard Based on available data, the classification criteria are not met.		
 Information on likely routes of exposure The intake of sulfuric acid is mainly to be expected via the inhalative pathway in the form of aerosols. No studies on absorbability are available. Generally, local reactions cause the main effects. Following impact to the skin strong local effects are the main issue. There is no indication of absorption of relevant amounts of S. via the intact skin. Absorbability via the gastrointestinal tract is assumed. However, no studies on the kinetics of uptake are available. [GESTIS] 		
 Additional toxicological information: In case of an acute molybdenum(VI) intoxication: diarrhoea, anaemia, fatigue, loss of appetite. Toxic effect on liver and kidneys after high doses. Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach. The aerosol is corrosive to the eves, the skin and the respiratory tract. Inhalation of aerosols may cause lung oedema 		
CAS: 7664-93-9 sulphuric acid		
. (source: GESTIS) Main toxic effects Acute: Irritation up to chemical burns to the mucous membranes and skin, danger of serious damage to the eyes and lungs Chronic: Irritation to the eyes and airways, erosion of the teeth, damage to the skin		
Further Information: Concentrated S. differs considerably from dilute Sulfuric acid with regard to chemical properties and effects. With increased dilution Sulfuric acid acts less aggressively.		
 • 11.2 Information on other hazards • Endocrine disrupting properties The product does not contain substances with endocrine disrupting properties. 		
Other information		

According to the information available to us, the chemical, physical and toxicological properties of the substances mentioned in Chapter 3 have not been thoroughly investigated.

Printing date 03.07.2023

(Contd. of page 5)

Version number 7 (replaces version 6)

Revision: 22.10.2022

Product name: Pb1 - Phosphate HR

(Contd. of page 6)

SECTION 12: Ecological information

· 12.1 Toxicity

Printing date 03.07.2023

Aquatic toxicity:

CAS: 7664-93-9 sulphuric acid

EC50 |>100 mg/l/48h (Daphnia magna) (OECD 202) (ECHA) LC50 16-29 mg/l/96h (bluegill) (Merck)

Bacterial toxicity: sulphates toxic > 2.5 g/l

Other information:

Toxic for fish: Sulphates > 7 g/l molybdenum compounds in general: > 25 mg/l $NH_{4^{+}} > 0.3 \text{ mg/l}$

12.2 Persistence and degradability .

Other information:

Mixture of inorganic compounds.

Methods for the determination of biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

- Depending on the concentration, nitrogen compounds may contribute to the eutrophication of water supplies.
- 12.4 Mobility in soil No further relevant information available.
- 12.5 Results of PBT and vPvB assessment
- This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.
- 12.6 Endocrine disrupting properties The product does not contain substances with endocrine disrupting properties.
- 12.7 Other adverse effects

Neutralisation possible in waste water treatment plants.

- Avoid transfer into the environment.
- · Water hazard:

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system. Must not reach sewage water or drainage ditch undiluted or unneutralised.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

· Recommendation

Must not be disposed of together with household garbage. Do not allow product to reach sewage system. Hand over to disposers of hazardous waste.

European waste catalogue

16 05 07* discarded inorganic chemicals consisting of or containing hazardous substances

Uncleaned packagings:

· Recommendation: Disposal must be made according to official regulations.

· Recommended cleaning agent: Water, if necessary with cleaning agent.

SECTION 14: Transport information		
· 14.1 UN number or ID number · ADR, IMDG, IATA	UN2796	
 14.2 UN proper shipping name ADR IMDG, IATA 	2796 SULPHURIC ACID solution SULPHURIC ACID solution	
		(Contd. on page 8)

GB -

Version number 7 (replaces version 6)

Revision: 22.10.2022

Product name: Pb1 - Phosphate HR

Printing date 03.07.2023

	(Contd. of page 7)
· 14.3 Transport hazard class(es)	
ADR	
8	
	8 (C1) Corrosive substances.
· Label	8
· IMDG, IATA	
· Class	8 Corrosive substances.
· Label	8
[·] 14.4 Packing group	
· ADR, IMDG, IATA	
14.5 Environmental hazards:	N
	No
14.6 Special precautions for user	Warning: Corrosive substances.
· EMS Number:	F-A,S-B
· Segregation groups	(SGG1) Acids
· Stowage Category	В
14.7 Maritime transport in bulk according to IN	
	Not applicable.
Iransport/Additional information:	
· ADR · Excepted quantities (EQ):	E0
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	Е
 Limited quantities (LQ) Excepted quantities (EQ) 	1L Code: E2
	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 500 ml

SECTION 15: Regulatory information

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

\cdot Regulation (EU) 2019/1148 on the marketing and use of explosives precursors	
Acquisition, introduction, possession or use of this product by the general public is restricted by Regulation (EU) 2019/1148.	
All suspicious transactions, and significant disappearances and theits should be reported to the relevant national contact point. Please see https://ec.europa.eu	

· explosives precursors - ANNEX I

CAS: 7664-93-9 sulphuric acid

· Regulation (EU) No 649/2012 concerning the export and import of hazardous chemicals (PIC)

None of the ingredients is listed.

(Contd. on page 9)

Version number 7 (replaces version 6)

Revision: 22.10.2022

Printing date 03.07.2023

Product name: Pb1 - Phosphate HR

	(Contd. of page 8)
 Regulation (EC) No 1334/2000 setting up a Community regime for the control of exports of dual- technology: 	ise items and
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 Commun in drug precursors 	ity and third countries
CAS: 7664-93-9 sulphuric acid	3
· Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:	
None of the ingredients is listed.	
· REGULATION (EU) 2019/1021 on persistent organic pollutants (POP)	
None of the ingredients is listed.	
· LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)	
None of the ingredients is listed.	
 Substances of very high concern (SVHC) according to REACH, Article 57 This product does not contain any substances of very high concern above the legal concentration limit of Substances of very high concern (SVHC) according to UK REACH This product does not contain any substances of very high concern above the legal concentration limit of see item 3 SVHC 	of ≥ 0.1% (w / w). of ≥ 0.1% (w / w).

· Directive 2012/18/EU (SEVESO III):

- · Named dangerous substances ANNEX I None of the ingredients is listed.
- REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3
- Information about limitation of use: Employment restrictions concerning young persons must be observed (94/33/EC).
- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Training hints Provide adequate information, instruction and training for operators.

· Relevant phrases

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

· Abbreviations and acronyms:

- EC50: effective concentration, 50 percent (in vivo)
- STOT: specific target organ toxicity SE: single exposure
- RE: repeated exposure

EC50: half maximal effective concentration

- IC50: half maximal inhibitory concentration
- NOEL or NOEC: No Observed Effect Level or Concentration

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

- RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
- IMDG: International Maritime Code for Dangerous Goods
- 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)
- DNEL: Derived No-Effect Level (UK REACH) PNEC: Predicted No-Effect Concentration (UK REACH)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- SVHC: Substances of Very High Concern
- vPvB: very Persistent and very Bioaccumulative
- Met. Corr.1: Corrosive to metals Category 1 Skin Corr. 1A: Skin corrosion/irritation Category 1A
- Eye Dam. 1: Serious eye damage/eye irritation Category 1

Version number 7 (replaces version 6)

Revision: 22.10.2022

Product name: Pb1 - Phosphate HR

· Sources

Data arise from safety data sheets, reference works and literature. ECHA: European CHemicals Agency http://echa.europa.eu IUCLID (International Uniform Chemical Information Database) GESTIS- Stoffdatenbank (Substance Database, Germany)

• * Data compared to the previous version altered.

(Contd. of page 9)

GB —

Printing date 03.07.2023



Page 1/10

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 24.02.2024

Version number 9

Revision: 07.12.2023

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

- 1.1 Product identifier
- · Product name: Pb2 Phosphate HR
- · 1.2 Relevant identified uses of the substance or mixture and uses advised against
- · Application of the substance / the preparation: Reagent for water analysis
- 1.3 Details of the supplier of the safety data sheet
- **Supplier:** Vecom Marine B.V. Mozartlaan 3 NL 3144 NA Maassluis The Netherlands

Telephone: +31 (0)10 5930 210 Email: sales@vecom-marine.com

1.4 Emergency telephone number:

Dutch Poisons Information Center (NVIC): +31 (0)88 755 8000 (24 hour service) Only for the purpose of informing medical personnel in case of acute intoxications. See section 4 on first aid measures.

SECTION 2: Hazards identification

· 2.1 Classification of the substance or mixture

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

GH

GHS05 corrosion

Met. Corr.1 H290 May be corrosive to metals.

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.



Acute Tox. 4 H332 Harmful if inhaled.

2.2 Label elements

• Labelling according to Regulation (EC) No 1272/2008 The product is classified and labelled according to the GB CLP regulation. • Hazard pictograms



· Signal word Danger

- · Hazard-determining components of labelling:
- nitric acid 18%

Hazard statements

H290 May be corrosive to metals.

H332 Harmful if inhaled.

H314 Causes severe skin burns and eye damage.

Precautionary statements

P260 Do not breathe mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

Version number 9

Revision: 07.12.2023

Product name: Pb2 - Phosphate HR

(Contd. of page 1) P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310

Immediately call a POISON CENTER/doctor.

Additional information:

Printing date 24.02.2024

EUH071 Corrosive to the respiratory tract.

· 2.3 Other hazards Acid burns have to treated immediately, as it may otherwise cause badly curing wounds.

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006. Determination of endocrine-disrupting properties

The product does not contain substances with endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

· Description: aqueous solution

 Dangerous components: 		
CAS: 7697-37-2	nitric acid	10-<20%
EINECS: 231-714-2	♦ Ox. Liq. 3, H272; ♦ Acute Tox. 3, H331; ♦ Met. Corr.1, H290; Skin Corr.	
Index No: 007-030-00-3	1Å, H314, EÚH071	
Reg.nr.: 01-2119487297-23-XXXX	ATE: LC50/4h inhalative: 2.65 mg/l	
	Specific concentration limits: Ox. Liq. 3; H272: C ≥ 65 %	
	Skin Corr. 1A; H314: C ≥ 20 %	
	Skin Corr. 1B; H314: 5 % ≤ C < 20 %	
CAS: 7803-55-6	ammonium meta-vanadate	0.1-<0.25%
EINECS: 232-261-3	♦ Acute Tox. 3, H301; ♦ Repr. 2, H361fd; STOT RE 1, H372; ♦ Aquatic Chronic 2, H411; ♦ Acute Tox. 4, H332; Eye Irrit. 2, H319	
Additional information For the wording of the listed hazard phrases refer to spetion 16		

dditional 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

General information

Personal protection for the First Aider!

Instantly remove any clothing soiled by the product.

- · After inhalation Supply fresh air or oxygen; call for doctor.
- After skin contact
- Wash with polyethylene glycol 400 and then rinse with copious amounts of water.
- Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.
- After eye contact

Rinse opened eye for several minutes (at least 15 min) under running water.

Call a doctor immediately.

· After swallowing

Rinse out mouth and then drink 1-2 glasses of water.

Do not induce vomiting; instantly call for medical help.

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

burns after inhalation: coughing breathing difficulty damage to the affected mucous membranes after swallowing: strong caustic effect. pain vomiting diarrhoea after absorption of large amounts: methaemoglobinaemia Danger

Danger of gastric perforation.

Version number 9

Revision: 07.12.2023

Product name: Pb2 - Phosphate HR

Danger of pulmonary oedema.

Danger of system failure.

Printing date 24.02.2024

• 4.3 Indication of any immediate medical attention and special treatment needed:

If swallowed or in case of vomiting, danger of entering the lungs

Subsequent observation for pneumonia and pulmonary oedema

SECTION 5: Firefighting measures

· 5.1 Extinguishing media

- Suitable extinguishing agents Use fire fighting measures that suit the environment.
- **5.2 Special hazards arising from the substance or mixture** The product is not combustible. Formation of toxic gases is possible during heating or in case of fire.

Can be released in case of fire: nitrous gases Nitrogen oxides (NOx)

- 5.3 Advice for firefighters
- Protective equipment: Wear self-contained breathing apparatus. Wear full protective suit.

• Additional information

Collect contaminated fire fighting water separately. It must not enter drains.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Ambient fire may liberate hazardous vapours.

SECTION 6: Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel:

Wear protective equipment. Keep unprotected persons away.

Avoid substance contact. Ensure adequate ventilation

Use breathing protection against the effects of fumes/dust/aerosol.

- · Advice for emergency responders: Protective equipment: see section 8
- · 6.2 Environmental precautions: Do not allow product to reach sewage system or water bodies.

6.3 Methods and material for containment and cleaning up:

Ensure adequate ventilation.

Neutralize with diluted sodium hydroxide solution or by throwing on lime sand, lime or sodium carbonate. Absorb with liquid-binding material (sand, diatomite, universal binders).

Dispose of contaminated material as waste according to item 13.

6.4 Reference to other sections

See Section 8 for information on personal protection equipment. See Section 13 for information on disposal.

SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

- · Advice on safe handling:
- Ensure good ventilation/exhaustion at the workplace. Prevent formation of aerosols.
- · Hygiene measures:
- Do not inhale gases / fumes / aerosols. Do not get in eyes, on skin, or on clothing. Take off immediately all contaminated clothing. Wash hands during breaks and at the end of the work. Do not eat, drink or smoke when using this product.

· 7.2 Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and containers:

Store in cool location. Keep only in original packaging (Contd. of page 2)

Version number 9

Revision: 07.12.2023

Printing date 24.02.2024

Product name: Pb2 - Phosphate HR

 Information about storage in one common storage facility: Store away from metals.
 Do not store together with alkalis (caustic solutions).
 Store away from flammable substances.
 Store away from reducing agents.
 Further information about storage conditions:

Keep container tightly sealed. Protect from heat and direct sunlight. Protect from the effects of light. Protect from humidity and keep away from water.

- Recommended storage temperature: 20°C +/- 5°C
- · 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

• Components with limit values that require monitoring at the workplace:

CAS: 7697-37-2 nitric acid

WEL (Great Britain) Short-term value: 2.6 mg/m³, 1 ppm

IOELV (European Union) Short-term value: 2.6 mg/m³, 1 ppm

Regulatory information

WEL (Great Britain): EH40/2020

- IOELV (European Union): (EU) 2019/1831
- Additional information: IOELV = Indicative Occupational Exposure Limit
- Recommended monitoring procedures: Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.
- · Additional information: The lists that were valid during the compilation were used as basis.

· 8.2 Exposure controls

· Engineering measures:

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See item 7.

· Individual protection measures, such as personal protective equipment

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.

· Eye/face protection

Tightly sealed safety glasses.

Use safety glasses that have been tested and approved in accordance with government standards such as EN 166.

- Hand protection
- Acid resistant gloves

Preventive skin protection by use of skin-protecting agents is recommended.

After use of gloves apply skin-cleaning agents and skin cosmetics.

Material of gloves

nitrile rubber, NBR Recommended thickness of the material: > 0.35 mm

- · Penetration time of glove material
- Value for the permeation: Level = 1 (< 10 min)

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Other skin protection (body protection): Acid resistant protective clothing

· Breathing equipment: Use breathing protection against the effects of fumes/dust/aerosol.

• Recommended filter device for short term use: Combination filter E-P2

· Environmental exposure controls Do not allow product to reach sewage system or water bodies.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

· Physical state

Fluid

Printing date 24.02.2024

Version number 9

Revision: 07.12.2023

Product name: Pb2 - Phosphate HR

	(Contd. of page 4)
· Form:	Solution
· Colour:	Yellow
· Odour:	Pungent
· Odour threshold:	CAS 7697-37-2: 0.27 ppm (anhydrous substance)
 Melting point/Freezing point: 	Not determined.
Boiling point or initial boiling point and boiling rang	e Not determined.
· Flammability	The product is not combustible.
Explosive properties:	Product is not explosive.
 Lower and upper explosion limit 	
Lower:	Not applicable.
Upper:	Not applicable.
· Flash point:	Not applicable.
 Auto-ignition temperature: 	Not applicable.
 Decomposition temperature: 	Not determined.
∙рН	< 1
	Strongly acidic
· Kinematic viscosity	Not determined.
· Solubility	
· Water:	Fully miscible
 Partition coefficient n-octanol/water (log value) 	Not applicable (mixture).
· Vapour pressure:	Not determined.
 Density and/or relative density 	
Density at 20°C:	1.1 g/cm ³
Relative density:	Not determined.
· Relative gas density	Not determined.
· Particle characteristics	Not applicable (liquid).
· 9.2 Other information	
 Information with regard to physical hazard classes 	
· Corrosive to metals	May be corrosive to metals.
· Metals that are corroded by the substance or mixtur	e Information on incompatible materials can be found in Sections 7 and
	10.
 Other safety characteristics 	
 Oxidising properties: 	Oxidising potential
	CAS 7697-37-2: is classified as oxidising.
· Additional information	
· Solids content:	< 1 %
· Solvent content:	
· Organic solvents:	0 %
· Water:	> 80 %

SECTION 10: Stability and reactivity

· 10.1 Reactivity see section 10.3

· 10.2 Chemical stability Stable at ambient temperature (room temperature).

10.3 Possibility of hazardous reactions

Reacts with metals forming hydrogen (Danger of explosion in case of large amounts!)

Corrosive action on metals

Reacts with reducing agents

Reacts with acids and alkali (lyes).

Reacts with metals to form nitrous fumes and hydrogen Reacts with ammonia (NH_3).

Reacts with alcohols

Acts as an oxidizing agent on organic materials such as wood, paper and fats

• 10.4 Conditions to avoid To avoid thermal decomposition do not overheat.

10.5 Incompatible materials:

metals alkali metals combustible substances organic solvents organic substances

Version number 9

Revision: 07.12.2023

Product name: Pb2 - Phosphate HR

10.6 Hazardous decomposition products:

nitrous gases

Printing date 24.02.2024

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

Classification according to calculation procedure: mful if inholo

Harmun Innaeu.			
· Acute tox	· Acute toxicity estimate (ATE _(MIX)) - Calculation method:		
Dermal C		15 mg/kg (vapour)	
· LD/LC50	values that	at are relevant for classification:	
CAS: 7697	7-37-2 nit	ric acid	
Oral	LDLo	430 mg/kg (human) (IUCLID)	
Inhalative	LC50/4h	2.65 mg/l (ATE) Registrant, ECHA: Under the conditions of the study (OECD 403) the LC50 for male and female rats after inhalation exposure to vapor atmosphere of nitric acid containing 0.8 % aerosol fraction is > 2.65 mg/L (referring to pure nitric acid).	
CAS: 7803-55-6 ammonium meta-vanadate			
Oral	LD50	169 mg/kg (rat) (OECD 401) (Merck)	
Dermal	LD50.	>2500 mg/kg (rat) (OECD402) (Registrant, ECHA: limit-test, all test animals survived at this concentration)	
Inhalative	LC50/4h	1.5 mg/l (ATE)	
· Skin corrosion/irritation Causes severe skin burns and eve damage.			

· Serious eye damage/irritation

Causes serious eye damage. Risk of blindness!

Information on components:

CAS: 7803-55-6 ammonium meta-vanadate

Irritation of skin OECD 404 (rabbit: no irritation)

Irritation of eyes OECD 405 (rabbit: irritation)

· 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.

· Information on components:

CAS: 7803-55-6 ammonium meta-vanadate

OECD 471 (negative) (Bacterial Reverse Mutation Test - Ames test)

• STOT (specific target organ toxicity) -single exposure Based on available data, the classification criteria are not met. • STOT (specific target organ toxicity) -repeated exposure Based on available data, the classification criteria are not met.

· Aspiration hazard Based on available data, the classification criteria are not met.

· Information on likely routes of exposure

An intake of nitric acid (during occupational handling) is mainly to be expected via the respiratory tract. Exposure to acid vapors caused irritation to the eyes and skin but damage to the airways is of the greatest concern. [GESTIS]

Additional toxicological information:

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach. The aerosol is corrosive to the eyes, the skin and the respiratory tract. Inhalation of aerosols may cause lung oedema.

(Contd. on page 7)

Version number 9

Revision: 07.12.2023

(Contd. of page 6)

Printing date 24.02.2024

Product name: Pb2 - Phosphate HR

CAS: 7697-37-2 nitric acid

(source: GESTIS)

Main toxic effects

Acute: Irritation and corrosion to the eyes, airways and skin, danger of severe damage to the eyes and lungs, after swallowing life threatening chemical burns in the gastrointestinal tract Chronic: Diseases of the airways, damage to the teeth

· 11.2 Information on other hazards

• Endocrine disrupting properties The product does not contain substances with endocrine disrupting properties.

· Other information

According to the information available to us, the chemical, physical and toxicological properties of the substances mentioned in Chapter 3 have not been thoroughly investigated.

SECTION 12: Ecological information

· 12.1 Toxicity

Aquatic toxicity:

CAS: 7697-37-2 nitric acid

LC50 72 mg/l/96h (mosquitofish) (IUCLID)

CAS: 7803-55-6 ammonium meta-vanadate

NOEC 0.87 mg/l (fish) (30d)

(ECHA: Clarias batrachus)

LC50 2.6 mg/l/96h (fish) (ECOTOX: Ictalurus catus)

12.2 Persistence and degradability

· Other information:

Mixture of inorganic compounds.

Methods for the determination of biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

CAS: 7697-37-2 nitric acid

log Pow -2.3 (.)

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

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

• 12.6 Endocrine disrupting properties The product does not contain substances with endocrine disrupting properties.

12.7 Other adverse effects

Depending on the concentration, phosphorus and/or nitrogen compounds may contribute to the eutrophication of water supplies. Harmful effect due to pH shift.

Forms corrosive mixtures with water even if diluted.

Avoid transfer into the environment.

· Water hazard:

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system. Must not reach sewage water or drainage ditch undiluted or unneutralised.

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

· Recommendation

Must not be disposed of together with household garbage. Do not allow product to reach sewage system. Hand over to disposers of hazardous waste.

· European waste catalogue

16 05 06* laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals

(Contd. on page 8)

Version number 9

Revision: 07.12.2023

(Contd. of page 7)

Product name: Pb2 - Phosphate HR

· Uncleaned packagings:

*

Printing date 24.02.2024

• Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information	
Section 14. mansport information	
· 14.1 UN number or ID number · ADR, IMDG, IATA	UN2031
 14.2 UN proper shipping name ADR IMDG, IATA 	2031 NITRIC ACID NITRIC ACID
14.3 Transport hazard class(es)	
ADR	
· Class · Label	8 (CT) Corrosive substances.
	~
Class	8 Corrosive substances.
· Label	8
· 14.4 Packing group · ADR, IMDG, IATA	ΙΙ
 14.5 Environmental hazards: Marine pollutant: 	No
14.6 Special precautions for user	Warning: Corrosive substances
· Kemler Number:	80
EMS Number:	F-A,S-B
- Segregation groups - Stowage Category	(SGG1) Acids D
14.7 Maritime transport in bulk according to IM	0
instruments	Not applicable.
· Transport/Additional information:	
ADR	
Excepted quantities (EQ):	E2
 Limited quantities (LQ) Excented quantities (EQ) 	1L Code: E2
	Maximum net quantity per inner packaging: 30 ml
-	Maximum net quantity per outer packaging: 500 ml
Transport category Tunnel restriction code	2 E
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum pat quantity per inper peakering: 20 ml
	Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml

(Contd. on page 9)

Version number 9

Revision: 07.12.2023

Product name: Pb2 - Phosphate HR

(Contd. of page 8)

SECTION 15: Regulatory information 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Poisons Act UK Regulated explosives precursors The substance falls under regulated explosive precursors due to the fact that the concentration is greater than/equal ($c \ge x$ %) the stated mass percentage: CAS: 7697-37-2 nitric acid 3% Regulated poisons None of the ingredients is listed. Reportable explosives precursors None of the ingredients is listed. Reportable poisons None of the ingredients is listed. · Regulation (EU) 2019/1148 on the marketing and use of explosives precursors Acquisition, introduction, possession or use of this product by the general public is restricted by Regulation (EU) 2019/1148. All suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point. Please see https://ec.europa.eu explosives precursors - ANNEX I CAS: 7697-37-2 nitric acid Regulation (EU) No 649/2012 concerning the export and import of hazardous chemicals (PIC) None of the ingredients is listed. Regulation (EC) No 1334/2000 setting up a Community regime for the control of exports of dual-use items and technology: None of the ingredients is listed. Regulation (EC) No 273/2004 on drug precursors None of the ingredients is listed. Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors None of the ingredients is listed. • Regulation (EC) No 1005/2009 on substances that deplete the ozone layer: None of the ingredients is listed. REGULATION (EU) 2019/1021 on persistent organic pollutants (POP) None of the ingredients is listed. LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV) None of the ingredients is listed. · Substances of very high concern (SVHC) according to REACH, Article 57 This product does not contain any substances of very high concern above the legal concentration limit of $\geq 0.1\%$ (w / w). Substances of very high concern (SVHC) according to UK REACH This product does not contain any substances of very high concern above the legal concentration limit of $\geq 0.1\%$ (w / w). · Directive 2012/18/EU (SEVESO III):

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

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

· Information about limitation of use: Employment restrictions concerning young persons must be observed (94/33/EC).

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

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This Safety Data Sheets is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

• Training hints Provide adequate information, instruction and training for operators.

– GB —

Safety data sheet according to 1907/2006/EC, Article 31

Version number 9

Revision: 07.12.2023

Product name: Pb2 - Phosphate HR

Printing date 24.02.2024

		(C	ontd. of page 9)
-	Relevan H272 H290 H301 H314 H319 H331 H332 H361fd H372 H411 EUH071	Image: Additional system of the problem of the pro	
	Abbrevi EC50: effec OECD: Org STOT: spee SE: single RE: repeater EC50: half IC50: half INOEL or N ADR: Acco Goods by F RID: Règle Dangerous IMDG: Inter IATA: Inter GHS: Glob EINECS: E ELINCS: E CAS: Chen LC50: Leth PBT: Persi SVHC: Sub vPVB: very ATE: Acute Ox. Liq. 3: Met. Corr.1 Acute Tox. Skin Corr. Eye Dam. Eye Dam. Eye Irrit. 2: Repr. 2: Re STOT RE Aquatic Ch	iations and acronyms: betwe concentration, 50 percent (in vivo) ganisation for Economic Co-operation and Development bedic target organ toxicity e exposure ated exposure fmaximal effective concentration MOEC: No Observed Effect Level or Concentration VOEC: No Observed Effect Level or Concentration voEC: No Observed Effect Level or Concentration ord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage or Road) ement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Carriage or Road) ement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Trans s Goods by Rail) errational Maritime Code for Dangerous Goods rmational Maritime Code for Dangerous Goods rmational Air Transport Association ally Harmonised System of Classification and Labelling of Chemicals European Inventory of Existing Commercial Chemical Substances European Inventory of Existing Commercial Chemical Substances European Inventory of Existing Commercial Chemical Society) hal concentration, 50 percent istent, Bioaccumulative and Toxic bstances of Very High Concern r/ Persistent and very Bioaccumulative e toxicity estimate values Oxidizing liquids – Category 3 1: Corrosive to metals – Category 1 3: Acute toxicity – Category 3 4: Acute toxicity – Category 1 1: Serious eye damage/eye irritation – Category 1 1: Specific target organ toxicity (repeated exposure) – Category 1 1: Specific target organ toxicity (repeated exposure) – Category 1 1: Specific target organ toxicity (repeated exposure) – Category 1 1: Specific target organ toxicity (repeated exposure) – Category 1 1: Specific target organ toxicity (repeated exposure) – Category 1 1: Sp	of Dangerous ansport of
•	Sources Data aris ECHA: E GESTIS IUCLID (RTECS	s se from safety data sheets, reference works and literature. European CHemicals Agency http://echa.europa.eu S- Stoffdatenbank (Substance Database, Germany) (International Uniform Chemical Information Database) (Registry of Toxic Effects of Chemical Substances)	
	* Doto o	ampared to the previous version altered	

 \cdot * Data compared to the previous version altered.