

Material Safety Data Sheet

According to 91/155 EEC

Reviewed on 03.02.2005

Product name: Total Phosphate (PO₄-P Acid Reagent 0-3.5 mg/l)

(Contd. of page 1)

Rinse out mouth and then drink plenty of water.

· The following symptoms may occur:

after swallowing:

damage to the affected mucous membranes possible

sickness

vomiting

diarrhoea

after inhalation:

mucous membrane irritation

coughing

* 5 Fire fighting measures

· Suitable extinguishing agents

CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

Use fire fighting measures that suit the environment.

· Special hazards caused by the material, its products of combustion or resulting gases:

Formation of toxic gases is possible during heating or in case of fire.

nitrous gases

Sulphur oxides (SO_x)

· Protective equipment:

Wear self-contained breathing apparatus.

Wear full protective suit.

· Additional information

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

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

* 6 Accidental release measures

· Person-related safety precautions: Wear protective equipment. Keep unprotected persons away.

· Measures for environmental protection: Do not allow product to reach sewage system or water bodies.

· Measures for cleaning/collecting:

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.

* 7 Handling and storage

· Handling**· Information for safe handling:**

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

· Information about protection against explosions and fires:

Protect from heat.

The product is not flammable

· Storage

· Requirements to be met by storerooms and containers: Store in cool location.

· Information about storage in one common storage facility: Store away from metals.

· Further information about storage conditions:

Keep container tightly sealed.

Store under dry conditions.

Protect from humidity and keep away from water.

Protect from the effects of light.

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Product name: Total Phosphate (PO₄-P Acid Reagent 0-3.5 mg/l)

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- **Storage class** Not required.

* 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
 - **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
 - **Additional information:** The lists that were valid during the compilation were used as basis.
 - **Personal protective equipment**
 - **General protective and hygienic measures**
Keep away from foodstuffs, beverages and food.
Take off immediately all contaminated clothing
Wash hands during breaks and at the end of the work.
Avoid contact with the eyes and skin.
 - **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
 - **Recommended filter device for short term use:** Filter B
 - **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
After use of gloves apply skin-cleaning agents and skin cosmetics.
 - **Material of gloves**
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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
Nitrile
Recommended thickness of the material: ≥ 0.11 mm
 - **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
Value for the permeation: Level ≥ 6 (480 min)
 - **Eye protection:** Tightly sealed safety glasses.
 - **Body protection:** Light weight protective clothing
-

* 9 Physical and chemical properties:

· Form:	Fluid
· Colour:	Colourless
· Odour:	Odourless
· Melting point/Melting range:	Not determined
· Boiling point/Boiling range:	100°C
· Flash point:	Not applicable
· Self-inflammability:	Product is not selfigniting.
· Danger of explosion:	Product is not explosive.
· Vapour pressure at 20°C:	23 hPa
· Density at 20°C	1.059 g/cm ³
· Solubility in / Miscibility with Water:	Fully miscible
· pH-value at 20°C:	< 1
· Solvent content:	
· Organic solvents:	0.0 %

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Product name: Total Phosphate (PO₄-P Acid Reagent 0-3.5 mg/l)

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Water:	< 95 %
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* 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Materials to be avoided:**
 - ammonia
 - alkalis
 - acids
 - metals
 - combustible substances
 - organic solvents
- **Dangerous reactions**
 - Corrosive action on metals
 - Reacts with metals forming hydrogen
 - > Explosive
 - Reacts with organic substances
- **Dangerous products of decomposition:**
 - nitrous gases
 - Sulphur oxides (SO_x)
 - see chapter 5

* 11 Toxicological information

- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.

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

7664-93-9 sulphuric acid

Oral	LD50	2140 (25%) mg/kg (rat)
Inhalative	LC 50	510 (pure) mg/m ³ /2h (rat)

- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** Irritant effect.
- **Sensitization:** No sensitizing effect known.
- **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:

Irritant

* 12 Ecological information:

- **Information about elimination (persistence and degradability):**
- **Other information:**
 - Quantitative data on the ecological effect of this product are not available.
 - Methods for the determination of biodegradability are not applicable to inorganic substances.
 - Does not cause biological oxygen deficit.
- **Ecotoxic effects:**

· **Acquatic toxicity:**

7664-93-9 sulphuric acid

Daphnia EC50	29 mg/l/24h (Daphnia magna)
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- **Remark:**
 - Forms corrosive mixtures with water even if diluted.
 - Toxic for algae

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Material Safety Data Sheet

According to 91/155 EEC

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Product name: Total Phosphate (PO₄-P Acid Reagent 0-3.5 mg/l)

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· **Remark:** neutralization possible

· **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.

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 unneutralized.

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.

13 Disposal considerations

· **Product:**

· **Recommendation** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **European waste catalogue**

16 05 07	discarded inorganic chemicals consisting of or containing dangerous substances
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· **Uncleaned packagings:**

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

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

14 Transport information

· **ADR/GGVSE:** UN 3316 CHEMIE-TESTSATZ, 9, II

· **IMDG/GGVSee:** UN 3316 CHEMICAL KIT; 9, II
 · **EMS-Number:** F-A S-P

ICAO/IATA: CHEMICAL KIT, 9, UN 3316, II

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Product name: Total Phosphate (PO₄-P Acid Reagent 0-3.5 mg/l)

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- | |
|---|
| <ul style="list-style-type: none">· Packaging group: III· Correct technical name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (SULPHURIC ACID) |
|---|
-

*15 Regulatory information

- **Designation according to EC guidelines:**
The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)
 - **Code letter and hazard designation of product:**
Xi Irritant
 - **Hazard-determining components of labelling:**
sulphuric acid
 - **Risk phrases:**
36/38 Irritating to eyes and skin.
 - **Safety phrases:**
23 Do not breathe fumes/aerosol.
25 Avoid contact with eyes.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
30 Never add water to this product.
37 Wear suitable gloves.
60 This material and its container must be disposed of as hazardous waste.
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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.

- **Relevant R-phrases**
35 Causes severe burns.
 - **Department issuing data specification sheet:** Department TSS, Dr. Manfred Kaul
 - **Data compared to the previous version altered.**
-

Material Safety Data Sheet

According to 91/155 EEC

Reviewed on 24.02.2005

* 1 Identification of substance:

- **Product details:** Reagent for water analysis
- **Product name:** **Total Phosphate (Vario Phosphate RGT F10)**
- **Catalog number:** 251 988 **Model:** PO4-3 TC
- **Supplier:**
WTW Wissenschaftlich-Technische Werkstätten GmbH
Dr.-Karl-Slevogt-Straße 1
D-82362 Weilheim
Fax: +49(0)881 183-420
Tel.: +49(0)881 183-0
Tel.: +49(0)881 183-100
Internet: <http://www.WTW.com>
E-Mail: Info@WTW.com
- **Emergency information:**
Poison Center Berlin, Germany
Tel.: +49(0)30 19240

* 2 Composition/Data on components:

- **Description:** Mixture of the substances listed below with harmless additions.

- **Dangerous components:**

CAS: 5329-14-6 EINECS: 226-218-8 EC Number: 016-026-00-0	sulphamidic acid	✘ Xi; R 36/38-52/53	20-25%
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- **Additional information** For the wording of the listed risk phrases refer to section 16.

* 3 Hazards identification

- **Hazard designation:**



Xi Irritant

- **Information pertaining to particular dangers for man and environment**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

R 36/38 Irritating to eyes and skin.

- **Classification system**

The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

* 4 First aid measures

- **General information** No special measures required.
- **After inhalation** Supply fresh air; consult doctor in case of symptoms.
- **After skin contact** Instantly wash with water and soap and rinse thoroughly.
- **After eye contact**
Rinse opened eye for several minutes under running water.
Seek medical treatment.

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Material Safety Data Sheet

According to 91/155 EEC

Reviewed on 24.02.2005

Product name: Total Phosphate (Vario Phosphate RGT F10)

(Contd. of page 1)

- **After swallowing**
Rinse out mouth and then drink plenty of water.
Seek immediate medical advice.
- **The following symptoms may occur:**
after inhalation:
irritation
coughing
breathing difficulty
after swallowing:
gastric or intestinal trouble
sickness
vomiting
mucous membrane irritation

* 5 Fire fighting measures

- **Suitable extinguishing agents**
CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
Use fire fighting measures that suit the environment.
- **Special hazards caused by the material, its products of combustion or resulting gases:**
Formation of toxic gases is possible during heating or in case of fire.
Nitrogen oxides (NO_x)
Sulphur oxides (SO_x)
ammonia
- **Protective equipment:** Wear self-contained breathing apparatus.
- **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Collect contaminated fire fighting water separately. It must not enter drains.

* 6 Accidental release measures

- **Person-related safety precautions:**
Avoid causing dust.
Wear protective equipment. Keep unprotected persons away.
- **Measures for environmental protection:** Do not allow product to reach sewage system or water bodies.
- **Measures for cleaning/collecting:**
Dilute with much water.
Use neutralizing agent.
(NaOH)
Dispose of the material collected according to regulations.
Collect mechanically.

* 7 Handling and storage

- **Handling**
- **Information for safe handling:** No special measures required.
- **Information about protection against explosions and fires:** The product is not flammable
- **Storage**
- **Requirements to be met by storerooms and containers:** Store in cool location.
- **Information about storage in one common storage facility:**
Store away from water.
Store away from metals.
- **Further information about storage conditions:**
Keep container tightly sealed.
Store under dry conditions.

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According to 91/155 EEC

Reviewed on 24.02.2005

Product name: Total Phosphate (Vario Phosphate RGT F10)

(Contd. of page 2)

- Protect from humidity and keep away from water.
- Protect from the effects of light.
- **Storage class** Not required.

* 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the compilation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures**
Keep away from foodstuffs, beverages and food.
Take off immediately all contaminated clothing
Wash hands during breaks and at the end of the work.
Avoid contact with the eyes and skin.
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter P2
- **Protection of hands:**
Only use chemical-protective gloves with CE-labelling of category III.
After use of gloves apply skin-cleaning agents and skin cosmetics.
Preventive skin protection by use of skin-protecting agents is recommended.
- **Material of gloves**
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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
nitrile rubber, NBR
Nitrile
Recommended thickness of the material: ≥ 0.11 mm
- **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
Value for the permeation: Level ≥ 6 (480 min)
- **Eye protection:** Tightly sealed safety glasses.
- **Body protection:** Protective work clothing.

* 9 Physical and chemical properties:

· Form:	Powder
· Colour:	White
· Odour:	Odourless
· Melting point/Melting range:	Not determined
· Boiling point/Boiling range:	1689°C
· Flash point:	Not applicable
· Self-inflammability:	Product is not selfigniting.
· Danger of explosion:	Product is not explosive.
· Density at 20°C	2.373 g/cm ³
· Solubility in / Miscibility with Water:	Soluble
· pH-value (30 g/l) at 20°C:	1.2

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Product name: Total Phosphate (Vario Phosphate RGT F10)

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· Solvent content:	
Organic solvents:	0.0 %
· Solids content:	
	100.0 %

* 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Materials to be avoided:**
 - oxidizing agents
 - alkalis
 - acids
 - metals
 - halogen compounds
 - nitrates
- **Dangerous reactions**
 - Corrosive action on metals
 - (Reacts with water)
 - Forms hydrogen in aqueous solution with metals
 - The solution in water is a strong acid.
- **Dangerous products of decomposition:** see chapter 5

* 11 Toxicological information

- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.

· LD/LC50 values that are relevant for classification:
5329-14-6 sulphamidic acid

Oral	LD50	3160 mg/kg (rat)
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50-81-7 ascorbic acid

Oral	LD50	11900 mg/kg (rat)
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10102-40-6 sodium molybdate

Oral	LD50	4233 mg/kg (rat)
Dermal	LD50	> 2000 mg/kg (rat)

- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** Irritant effect.
- **Sensitization:** No sensitizing effect known.
- **Additional toxicological information:**
 - The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:
 - Irritant
 - The aerosol is corrosive to the eyes, the skin and the respiratory tract. Inhalation of sulfamic acid aerosols may cause lung oedema.

* 12 Ecological information:

- **Information about elimination (persistence and degradability):**
- **Other information:** Quantitative data on the ecological effect of this product are not available.

· Behaviour in environmental systems:
5329-14-6 sulphamidic acid

log P(o/w)	-4.34 (.)
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Product name: Total Phosphate (Vario Phosphate RGT F10)

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50-81-7 ascorbic acid	
log P(o/w)	-2.15 (.)
· Ecotoxicological effects:	
· Aquatic toxicity:	
5329-14-6 sulphamidic acid	
LC50	70.3 mg/l/96h (Pimephales promelas)
50-81-7 ascorbic acid	
LC50	33000 (Merck) mg/l/48h (Leuciscus idus) 1020 mg/l/96h (Onchorhynchus mykiss)
10102-40-6 sodium molybdate	
EC50	330 mg/l/48h (Daphnia magna)
LC50	7600 mg/l/96h (Onchorhynchus mykiss)

· **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.

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 unneutralized.

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.

* 13 Disposal considerations

· **Product:**

· **Recommendation** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **European waste catalogue**

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

· **Uncleaned packagings:**

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

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

* 14 Transport information

· **ADR/GGVSE:** UN 3316 CHEMIE-TESTSATZ, 9, II

· **IMDG/GGVSee:** UN 3316 CHEMICAL KIT, 9, II
· **EMS-Number:** F-A S-P

· **ICAO/IATA:** CHEMICAL KIT, 9, UN 3316, II

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Product name: Total Phosphate (Vario Phosphate RGT F10)

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* 15 Regulatory information

· Designation according to EC guidelines:

The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

· Code letter and hazard designation of product:

Xi Irritant

· Risk phrases:

36/38 Irritating to eyes and skin.

· Safety phrases:

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

37 Wear suitable gloves.

60 This material and its container must be disposed of as hazardous waste.

* 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.

· Relevant R-phrases

36/38 Irritating to eyes and skin.

52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· Department issuing data specification sheet: Department TSS, Dr. Manfred Kaul**· Data compared to the previous version altered.**

Material Safety Data Sheet

According to 91/155 EEC

Reviewed on 23.02.2005

Product name: Total Phosphate (Vario Potassium Persulfate F 10)

(Contd. of page 1)

* 4 First aid measures

· General information

Instantly remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· 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

Instantly rinse with water.

Seek medical treatment.

· After eye contact

Rinse opened eye for several minutes under running water.

Call a doctor immediately.

· After swallowing Drink copious amounts of water and provide fresh air. Instantly call for doctor.**· The following symptoms may occur:**

after inhalation:

coughing

breathing difficulty

irritation

after swallowing:

headache

sickness

mucous membrane irritation

gastric or intestinal trouble

· Danger

risk of skin sensitization

risk of airways sensitization

Danger of pulmonary oedema.

* 5 Fire fighting measures

· Suitable extinguishing agents

Water

Use fire fighting measures that suit the environment.

· Special hazards caused by the material, its products of combustion or resulting gases:

Formation of toxic gases is possible during heating or in case of fire.

Sulphur oxides (SO_x)

Oxygen (O₂)

· Protective equipment:

Wear full protective suit.

Wear self-contained breathing apparatus.

· Additional information

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

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

* 6 Accidental release measures

· Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Put on breathing apparatus.

· Measures for environmental protection: Do not allow product to reach sewage system or water bodies.**· Measures for cleaning/collecting:**

Collect mechanically.

Dispose of contaminated material as waste according to item 13.

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Product name: Total Phosphate (Vario Potassium Persulfate F 10)

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Ensure adequate ventilation.

* 7 Handling and storage

- **Handling**
- **Information for safe handling:** Work only in fume cupboard.
- **Information about protection against explosions and fires:**
 - Keep ignition sources away - Do not smoke.
 - Protect from heat.
 - Dust can combine with air to form an explosive mixture.
- **Storage**
- **Requirements to be met by storerooms and containers:** Store in cool location.
- **Information about storage in one common storage facility:**
 - Store away from reducing agents.
 - Store away from flammable substances.
- **Further information about storage conditions:**
 - Keep container tightly sealed.
 - Store under dry conditions.
 - Protect from humidity and keep away from water.
 - Protect from the effects of light.
- **Storage class** Not required.

* 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

Components with limit values that require monitoring at the workplace:	
7775-27-1 disodium peroxodisulphate (90-100%)	
OES	Long-term value: 1 mg/m ³ measured as [S2O8]
7727-21-1 potassium persulphate (5-10%)	
OES	Long-term value: 1 mg/m ³ measured as [S2O8]

- **Additional information:** The lists that were valid during the compilation were used as basis.

- **Personal protective equipment**

- **General protective and hygienic measures**

- Keep away from foodstuffs, beverages and food.
- Take off immediately all contaminated clothing
- Wash hands during breaks and at the end of the work.
- Avoid contact with the eyes and skin.

- **Breathing equipment:**

In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.

- **Recommended filter device for short term use:** Filter P2

- **Protection of hands:**

- Only use chemical-protective gloves with CE-labelling of category III.
- The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
- After use of gloves apply skin-cleaning agents and skin cosmetics.

- **Material of gloves**

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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Nitrile

Recommended thickness of the material: ≥ 0.11 mm

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Product name: Total Phosphate (Vario Potassium Persulfate F 10)

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· Penetration time of glove material

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

Value for the permeation: Level ≥ 6 (480 min)

· Eye protection: Tightly sealed safety glasses.

· Body protection: Protective work clothing.

* 9 Physical and chemical properties:

· Form:	Powder
· Colour:	White
· Odour:	Odourless
· Melting point/Melting range:	Not applicable
· Boiling point/Boiling range:	Not applicable
· Flash point:	Not determined
· Inflammability (solid, gaseous)	Contact with combustible material may cause fire.
· Self-inflammability:	Product is not selfigniting.
· Density at 20°C	1.224 g/cm ³
· Solubility in / Miscibility with Water:	Soluble
· pH-value (9 g/l) at 20°C:	4.2
· Solvent content:	
Organic solvents:	0.0 %
· Solids content:	100.0 %

* 10 Stability and reactivity

· Thermal decomposition / conditions to be avoided: To avoid thermal decomposition do not overheat.

· Materials to be avoided:

combustible substances

alcohols

reducing agents

· Dangerous reactions

Can react violently with oxygen rich (oxidizing) material. Explosive.

Risk of dust explosion

· Dangerous products of decomposition: see chapter 5

* 11 Toxicological information

· Acute toxicity: Quantitative data on the toxicity of the preparation are not available.

· LD/LC50 values that are relevant for classification:
7775-27-1 disodium peroxodisulphate

Oral	LD50	930 mg/kg (rat)
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7727-21-1 potassium persulphate

Oral	LD50	802 mg/kg (rat)
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· Primary irritant effect:
· on the skin: Irritant to skin and mucous membranes.

· on the eye: Irritant effect.

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Product name: Total Phosphate (Vario Potassium Persulfate F 10)

(Contd. of page 4)

- **Sensitization:**

Sensitization possible by inhalation.
Sensitization possible by skin contact.

- **Subacute to chronic toxicity:**

CAS 7775-27-1:
MERCK: Sensitization test (guinea pig): positiv (OECD 406)

- **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:

Harmful
Irritant

* 12 Ecological information:

- **Information about elimination (persistence and degradability):**

- **Other information:**

Quantitative data on the ecological effect of this product are not available.
Does not cause biological oxygen deficit.

- **Ecotoxic effects:**

- **Acquatic toxicity:**

7775-27-1 disodium peroxodisulphate

EC50	133 mg/l/48h (Daphnia magna)
LC50	771 mg/l/96h (Onchorhynchus mykiss)

7727-21-1 potassium persulphate

Daphnia EC50	357 mg/l/24h (Daphnia magna)
LC50	100 mg/l/96h (Poecilia reticulata)

- **Remark:**

Toxic for fish:
sulphates > 7 g/l
Reacts with water to form toxic decomposition products.

- **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.
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 unneutralized.

13 Disposal considerations

- **Product:**

- **Recommendation** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **European waste catalogue**

16 05 07	discarded inorganic chemicals consisting of or containing dangerous substances
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- **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

— GB —

(Contd. on page 6)

Material Safety Data Sheet

According to 91/155 EEC

Reviewed on 23.02.2005

Product name: Total Phosphate (Vario Potassium Persulfate F 10)

(Contd. of page 5)

* 14 Transport information

· ADR/GGVSE: UN 3316 CHEMIE-TESTSATZ, 9, II

· IMDG/GGVSee: UN 3316 CHEMICAL KIT; 9, II
· EMS-Number: F-A S-P

· ICAO/IATA: CHEMICAL KIT, 9, UN 3316, II

* 15 Regulatory information

· **Designation according to EC guidelines:**

The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

· **Code letter and hazard designation of product:**

Xn Harmful
O Oxidising

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

disodium peroxodisulphate
potassium persulphate

· **Risk phrases:**

8 Contact with combustible material may cause fire.
22 Harmful if swallowed.
36/37/38 Irritating to eyes, respiratory system and skin.
42/43 May cause sensitisation by inhalation and skin contact.

· **Safety phrases:**

17 Keep away from combustible material.
22 Do not breathe dust.

(Contd. on page 7)

Material Safety Data Sheet

According to 91/155 EEC

Reviewed on 23.02.2005

Product name: Total Phosphate (Vario Potassium Persulfate F 10)

(Contd. of page 6)

- 24 Avoid contact with skin.
 - 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 - 37 Wear suitable gloves.
 - 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
 - 60 This material and its container must be disposed of as hazardous waste.
-
-

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.

· **Relevant R-phrases**

- 22 Harmful if swallowed.
- 36/37/38 Irritating to eyes, respiratory system and skin.
- 42/43 May cause sensitisation by inhalation and skin contact.
- 8 Contact with combustible material may cause fire.

· **Department issuing data specification sheet:** Department TSS, Dr. Manfred Kaul

· **Data compared to the previous version altered.**

— GB —

Material Safety Data Sheet

According to 91/155 EEC

Reviewed on 04.02.2005

Product name: Total Phosphate (Vario Sodium hydroxide 1.54N)

(Contd. of page 1)

Instantly wash with polyethylene glycol 400.

Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.

· **After eye contact**

Rinse opened eye for several minutes under running water.

Call a doctor immediately.

· **After swallowing** Drink copious amounts of water and provide fresh air. Instantly call for doctor.

· **The following symptoms may occur:**

after inhalation:

damage to the affected mucous membranes

coughing

breathing difficulty

after swallowing:

pain

Strong caustic effect.

· **Danger** Danger of gastric perforation.

· **Treatment** Subsequent observation for pneumonia and pulmonary oedema

* 5 Fire fighting measures

· **Suitable extinguishing agents**

CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

Use fire fighting measures that suit the environment.

· **Special hazards caused by the material, its products of combustion or resulting gases:**

Development of hazardous combustion gases or vapours possible in the event of fire.

· **Protective equipment:** Wear self-contained breathing apparatus.

· **Additional information**

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

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

* 6 Accidental release measures

· **Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.

· **Measures for environmental protection:** Do not allow product to reach sewage system or water bodies.

· **Measures for cleaning/collecting:**

Ensure adequate ventilation.

neutralize with diluted sulphuric acid

Absorb with liquid-binding material (sand, diatomite, universal binders).

Dispose of contaminated material as waste according to item 13.

* 7 Handling and storage

· **Handling**

· **Information for safe handling:**

Open and handle container with care.

Prevent formation of aerosols.

Ensure good ventilation/exhaustion at the workplace.

· **Information about protection against explosions and fires:**

Protect from heat.

The product is not flammable

· **Storage**

· **Requirements to be met by storerooms and containers:** Store in cool location.

· **Information about storage in one common storage facility:** Store away from metals.

· **Further information about storage conditions:**

Keep container tightly sealed.

Store under dry conditions.

(Contd. on page 3)

Material Safety Data Sheet

According to 91/155 EEC

Reviewed on 04.02.2005

Product name: Total Phosphate (Vario Sodium hydroxide 1.54N)

(Contd. of page 2)

Protect from humidity and keep away from water.

Protect from the effects of light.

· **Storage class** Not required.

* 8 Exposure controls and personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Components with limit values that require monitoring at the workplace:**

1310-73-2 sodium hydroxide

OES (Great Britain) | Short-term value: 2 mg/m³

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

· **Personal protective equipment**

· **General protective and hygienic measures**

Keep away from foodstuffs, beverages and food.

Take off immediately all contaminated clothing

Wash hands during breaks and at the end of the work.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

Do not eat, drink or smoke while working.

· **Breathing equipment:**

In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.

· **Recommended filter device for short term use:** Filter B

· **Protection of hands:**

Alkaline resistant gloves

Only use chemical-protective gloves with CE-labelling of category III.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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**

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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.11 mm

· **Penetration time of glove material**

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

Value for the permeation: Level ≥ 6 (480 min)

· **Eye protection:** Tightly sealed safety glasses.

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

* 9 Physical and chemical properties:

· **Form:** Fluid

· **Colour:** Colourless

· **Odour:** Odourless

· **Melting point/Melting range:** Not determined

· **Boiling point/Boiling range:** 100°C

· **Flash point:** Not applicable

· **Self-inflammability:** Product is not selfigniting.

· **Danger of explosion:** Product is not explosive.

(Contd. on page 4)

Material Safety Data Sheet

According to 91/155 EEC

Reviewed on 04.02.2005

Product name: Total Phosphate (Vario Sodium hydroxide 1.54N)

(Contd. of page 3)

· Density at 20°C	1.068 g/cm ³
· Solubility in / Miscibility with Water:	Fully miscible
· pH-value at 20°C:	13.3
· Solvent content:	
Organic solvents:	0.0 %
Water:	> 90 %
· Solids content:	< 10 %

* 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Materials to be avoided:**
 - acids
 - metals
 - aluminium
 - zinc
 - NH_x
- **Dangerous reactions**
 - Corrosive action on metals
 - Corrodes aluminium
 - Reacts with metals forming hydrogen
 - > Explosive
- **Dangerous products of decomposition:**
 - Hydrogen
 - ammonia
 - see chapter 5

* 11 Toxicological information

- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.

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

1310-73-2 sodium hydroxide

Oral	LD50	2000 mg/kg (rat)
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- **Primary irritant effect:**
 - **on the skin:** Strong caustic effect on skin and mucous membranes.
 - **on the eye:** Strong caustic effect.
- **Sensitization:** No sensitizing effect known.
- **Additional toxicological information:**
 - The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:
 - Corrosive
 - Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

* 12 Ecological information:

- **Information about elimination (persistence and degradability):**
- **Other information:**
 - Quantitative data on the ecological effect of this product are not available.
 - Methods for the determination of biodegradability are not applicable to inorganic substances.
 - Does not cause biological oxygen deficit.

(Contd. on page 5)

Material Safety Data Sheet

According to 91/155 EEC

Reviewed on 04.02.2005

Product name: Total Phosphate (Vario Sodium hydroxide 1.54N)

(Contd. of page 4)

· **Ecotoxicological effects:**

· **Aquatic toxicity:**

1310-73-2 sodium hydroxide

LC 50 | 189 mg/l (fish)

· **Remark:**

Toxic for fish:

Forms corrosive mixtures with water even if diluted.

· **Remark:** neutralization possible

· **General notes:**

Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.

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 unneutralized.

13 Disposal considerations

· **Product:**

· **Recommendation** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **European waste catalogue**

16 05 07 | discarded inorganic chemicals consisting of or containing dangerous substances

· **Uncleaned packagings:**

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

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

14 Transport information

· **ADR/GGVSE:** UN 3316 CHEMIE-TESTSATZ, 9, II

· **IMDG/GGVSee:** UN 3316 CHEMICAL KIT, 9, II **EMS-Number:** F-A S-P

(Contd. on page 6)

— GB —

Material Safety Data Sheet

According to 91/155 EEC

Reviewed on 04.02.2005

Product name: Total Phosphate (Vario Sodium hydroxide 1.54N)

(Contd. of page 5)

· ICAO/IATA: CHEMICAL KIT, 9, UN 3316, II

* 15 Regulatory information

· Designation according to EC guidelines:

The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

· Code letter and hazard designation of product:

C Corrosive

· Hazard-determining components of labelling:

sodium hydroxide

· Risk phrases:

35 Causes severe burns.

· Safety phrases:

20 When using do not eat or drink.

23 Do not breathe fumes/aerosol.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

60 This material and its container must be disposed of as hazardous waste.

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.

· Relevant R-phrases

35 Causes severe burns.

· Department issuing data specification sheet: Department TSS, Dr. Manfred Kaul**· Data compared to the previous version altered.**