Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 04/12/2018 Reviewed on 04/12/2018

* 1 Identification

· **Product identifier**

· **Trade name: Phosphate HR P1**

· **Catalogue number:** 00515811, 515810BT, 4515810BT, 00515819BT

· **Application of the substance / the mixture:** Reagent for water analysis

· **Manufacturer/Supplier:**
Tintometer Inc.
6456 Parkland Drive
Sarasota, FL 34243
USA
phone: (941) 756-6410
fax: (941) 727-9654
www.lovibond.us
Made in Germany

· **Emergency telephone number:** + 1 866 928 0789 (English, French, Spanish)

* 2 Hazard(s) identification

· **Classification of the substance or mixture**


GHS08 Health hazard

Repr. 1B H360 May damage fertility or the unborn child.


GHS05 Corrosion

Eye Dam. 1 H318 Causes serious eye damage.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Hazard Communication Standard (HCS).
· **Hazard pictograms**


GHS05 GHS08

· **Signal word** Danger
· **Hazard-determining components of labeling:**
sodium bisulfate
ammonium chloride
boric acid
· **Hazard statements**
H318 Causes serious eye damage.
H360 May damage fertility or the unborn child.
· **Precautionary statements**
P201 Obtain special instructions before use.
P280 Wear protective gloves/protective clothing/eye protection.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P405 Store locked up.

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· **Other hazards** No further relevant information available.

*
3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of inorganic compounds.
· **Composition and Information on Ingredients:**
Percent ranges are used due to the confidential product information.

CAS: 7757-82-6 EINECS: 231-820-9	sodium sulphate		10–20%
CAS: 7681-38-1 EINECS: 231-665-7 Index number: 016-046-00-X RTECS: VZ1860000	sodium bisulfate	Eye Dam. 1, H318	30–40%
CAS: 12125-02-9 EINECS: 235-186-4 Index number: 017-014-00-8 RTECS: BP 4550000	ammonium chloride	Acute Tox. 4, H302; Eye Irrit. 2A, H319	20–30%
CAS: 10043-35-3 EINECS: 233-139-2 Index number: 005-007-00-2 RTECS: ED 4550000	boric acid	Repr. 1B, H360	10–20%

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

4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:**
Supply fresh air.
Seek medical treatment.
· **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
Seek medical treatment.
· **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.
Seek medical treatment.
· **Most important symptoms and effects, both acute and delayed**
burns
resorption
after inhalation:
mucous membrane irritation
coughing
breathing difficulty
after swallowing:
irritations
sickness
vomiting
diarrhoea
cardiovascular disorders
after absorption of large amounts:
headache
drop in blood pressure
narcotic conditions
CNS disorders
respiratory paralysis
cramps
· **Danger:** Danger of pulmonary edema.

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

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
· **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.
In case of fire, the following can be released:
Hydrogen chloride (HCl)
Ammonia (NH_3)
Sulfur oxides (SOx)
Nitrogen oxides (NOx)
Sodium oxide
· **Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
· **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.

6 Accidental release measures

· **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
· **Advice for emergency responders:** Protective equipment: see section 8
· **Environmental precautions:** Do not allow product to reach sewage system or any water course.
· **Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Pick up mechanically.
Dispose contaminated material as waste according to item 13.
· **Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
· **Advice on safe handling:**
Open and handle receptacle with care.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of dust.
· **Hygiene measures:**
Do not get in eyes, on skin, or on clothing.
Take off immediately all contaminated clothing.
Store protective clothing separately.
Wash hands before breaks and at the end of work.
Do not eat, drink or smoke when using this product.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
Unsuitable material for receptacle: aluminium
Unsuitable material for container: metals, metal alloys

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· **Information about storage in one common storage facility:**
Do not store together with alkalis (caustic solutions).
Store away from oxidizing agents.
· **Further information about storage conditions:**
Store under lock and key and with access restricted to technical experts or their assistants only.
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
Protect from exposure to the light.
Store in dry conditions.
Protect from humidity and water.
This product is hygroscopic.
· **Recommended storage temperature:** 20°C +/- 5°C (approx. 68°F)
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Control parameters**
· **Components with limit values that require monitoring at the workplace:**
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.

CAS: 12125-02-9 ammonium chloride	
REL (USA)	Short-term value: 20 mg/m³ Long-term value: 10 mg/m³
TLV (USA)	Short-term value: 20 mg/m³ Long-term value: 10 mg/m³
EL (Canada)	Short-term value: 20 mg/m³ Long-term value: 10 mg/m³ fume
EV (Canada)	Short-term value: 20 mg/m³ Long-term value: 10 mg/m³ fume
CAS: 7757-82-6 sodium sulphate	
TLV (USA)	Short-term value: NIC-0.2 mg/m³ thoracic fraction of aerosol
CAS: 10043-35-3 boric acid	
TLV (USA)	Short-term value: 6* mg/m³ Long-term value: 2* mg/m³ *as inhalable fraction
EL (Canada)	Short-term value: 6 mg/m³ Long-term value: 2 mg/m³
EV (Canada)	Short-term value: 6 mg/m³ Long-term value: 2 mg/m³ inorganic, inhalable

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

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

· **Personal protective equipment:**
· **Breathing equipment:** Use respiratory protective device against the effects of fumes/dust/aerosol.
· **Recommended filter device for short term use:** Filter P3
· **Protection of hands:**
Protective 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: ≥ 0.11 mm
· **Penetration time of glove material**
Value for the permeation: Level ≤ 1 (10 min)
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:** Tightly sealed goggles

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· **Body protection:** Protective work clothing

· **Limitation and supervision of exposure into the environment:**
Do not allow product to reach sewage system or any water course.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **Appearance:**	
Form / Physical state:	Tablets
Color:	White
· **Odor:**	Odorless
· **Odor threshold:**	Not applicable.
· **pH-value (40.6 g/l) at 20 °C (68 °F):**	1.1
· **Melting point/freezing point:**	Not determined.
· **Initial boiling point and boiling range:**	Not determined.
· **Flash point:**	Not applicable.
· **Flammability (solid, gas):**	The product is not combustible.
· **Decomposition temperature:**	> 171 °C (>339.8 °F) (CAS 10043-35-3)
· **Auto-ignition temperature:**	Product is not self-igniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Flammability or explosive limits:**	
Lower:	Not applicable.
Upper:	Not applicable.
· **Oxidizing properties:**	none
· **Vapor Pressure:**	Not applicable.
· **Density:**	Not determined.
· **Relative density:**	Not determined.
· **Vapor density:**	Not applicable.
· **Evaporation rate:**	Not applicable.
· **Solubility(ies)**	
Water:	Soluble.
· **Partition coefficient (n-octanol/water):**	Not applicable.
· **Viscosity:**	Not applicable.
· **Solvent content:**	
Organic solvents:	0.0 %
Solids content:	100.0 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** see section "Possibility of hazardous reactions"
· **Chemical stability** Stable at ambient temperature (room temperature).
· **Possibility of hazardous reactions**
Forms hydrogen in aqueous solution with metals (Danger of explosion!).
Aqueous solution reacts with metals.
If moisture is present, boric acid can be corrosive to iron.
Liberates acid in contact with water or alcohol.
Reacts with acids, alkalis and oxidizing agents.
Reacts with halogenated compounds.
Violent reactions possible with:
chlorine
· **Conditions to avoid** To avoid thermal decomposition do not overheat.

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· **Incompatible materials:**
metals
aluminum
copper
Iron
· **Hazardous decomposition products:**
nitrous gases
Hydrogen chloride (HCl)
Ammonia (NH_3)
In case of fire: see section 5.

* 11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:** Based on available data, the classification criteria are not met.

· **Acute toxicity estimate ($ATE_{(MIX)}$) - Calculation method:**		
Oral	GHS $ATE_{(MIX)}$	2570 mg/kg (.)

· **LD/LC50 values that are relevant for classification:**
The following statements refer to the individual components.

CAS: 7681-38-1 sodium bisulfate		
Oral	LD50	2490 mg/kg (rat) (IUCLID)
Dermal	LD50.	>2000 mg/kg (rabbit)
CAS: 12125-02-9 ammonium chloride		
Oral	LD50	1410 mg/kg (rat) (OECD 1410) (Merck)
CAS: 7757-82-6 sodium sulphate		
Dermal	LD50.	>2000 mg/kg (rat)
CAS: 10043-35-3 boric acid		
Oral	LD50	2660 mg/kg (rat) (OECD 401) (GESTIS, ECHA registrant)
Dermal	LD50.	>2000 mg/kg (rat) (ECHA, registrant: no deaths occurred.)
	LD_0	1500 mg/kg (child) (MERCK)
Inhalative	LC50.	>2.03 mg/l/4h (rat) (OECD 403, aerosol) (ECHA, registrant: no deaths occured)
	NOAEL	9.6 mg/kg (rat) (NTP)

· **Primary irritant effect:**
· **on the skin:** Based on available data, the classification criteria are not met.
· **on the eye:**
Causes serious eye damage.
Risk of corneal clouding.

· **Information on components:**		
CAS: 7681-38-1 sodium bisulfate		
Irritation of skin	OECD 404	(rabbit: no irritation)
Irritation of eyes	OECD 405	(rabbit: severe irritations)
CAS: 12125-02-9 ammonium chloride		
Irritation of eyes	OECD 405	(rabbit: irritation)
CAS: 7757-82-6 sodium sulphate		
Irritation of skin	OECD 404	(rabbit: no irritation)
Irritation of eyes	OECD 405	(rabbit: slight irritation)
CAS: 10043-35-3 boric acid		
Irritation of skin	OECD 404	(rabbit: no irritation) (Registrant, ECHA)

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Irritation of eyes	OECD 405	(rabbit: slight irritation) (IUCLID)

· **Sensitization:** Based on available data, the classification criteria are not met.

· **Information on components:**		
CAS: 12125-02-9 ammonium chloride		
Sensitization	OECD 406	(guinea pig: negative) (EPA OPP 81-6: Guinea pig maximisation test)
CAS: 10043-35-3 boric acid		
Sensitization	OECD 406	(guinea pig: negative)

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

· **Other information:** see section 8 / 15

· **Synergistic Products:** None

· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):**
The following statements refer to the mixture:
Repr. 1B
· **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** May damage fertility or the unborn child.

· **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 components:**
CAS 10043-35-3: evaluation for carcinogenicity: negative in animals (NTP)
OECD 414: Teratogenicity testing
OECD 473: Mutagenicity testing
OECD 471, 474, 476, 487: Germ cell mutagenicity testing

CAS: 12125-02-9 ammonium chloride	
OECD 471	(negative) (Escherichia coli / Salmonella typhimurium)
CAS: 10043-35-3 boric acid	
OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test)
OECD 476	(negative) (In Vitro Mammalian Cell Gene Mutation Test) (mouse lymphomea test)
OECD 414	(negative) (oral, rat) (ECHA, registrant: no evidence of developmental toxicity up to 55 mg/kg bw. At 76 mg/kg bw there was reduced fetal bodyweight, short and wavy ribs, and these effects disappeared during the postnatal period.)
OECD 474	(negative) (in vivo, mice)

· **Additional toxicological information:**
CAS 10043-35-3: Absorption through gastro-intestinal tract, mucous membranes
Boric acid / Borate may cause developmental changes based on published data, at doses many times in excess of those that could occur through inhalation of dust in occupational settings.
· **Experience with humans:** CAS 10043-35-3: Can cause kidney damages.

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12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**	
CAS: 7681-38-1 sodium bisulfate	
EC50	190 mg/l/48h (Daphnia magna) (IUCLID)
CAS: 12125-02-9 ammonium chloride	
EC50	>100 mg/l/48h (Daphnia magna)
LC50	42.91 mg/l/96h (rainbow trout) (Merck)
CAS: 7757-82-6 sodium sulphate	
EC50	2564 mg/l/48h (Daphnia magna) (IUCLID)
LC50	120 mg/l/96h (mosquitofish) (IUCLID)
	13500–14500 mg/l/96h (fathhead minnow)
CAS: 10043-35-3 boric acid	
EC50	133 mg/l/48h (Daphnia magna) (ECOTOX)
LC50	50–100 mg/l/96h (rainbow trout) (ECOTOX)

· **Bacterial toxicity:**
sulfates toxic > 2.5 g/l

CAS: 7681-38-1 sodium bisulfate	
EC10	>1000 mg/l (Pseudomonas putida) (16 h)
CAS: 7757-82-6 sodium sulphate	
EC10	>1000 mg/l (Pseudomonas putida) (16h) (IUCLID)

· **Other information:**
Toxic for fish:
sulfates > 7 g/l
NH_4^+ > 0.3 mg/l

· **Persistence and degradability** .

· **Other information:**
Mixture of inorganic compounds.
Methods for the determination of biodegradability are not applicable to inorganic substances.

· **Bioaccumulative potential**
Pow = n-octanol/wasser partition coefficient
log Pow < 1 = Does not accumulate in organisms.

CAS: 12125-02-9 ammonium chloride	
log Pow	-4.37 (.)
CAS: 10043-35-3 boric acid	
log Pow	-1.09 (.) (OECD 107, 22°C) (Merck)

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

· **Other adverse effects**
Depending on the concentration, phosphorus and/or nitrogen compounds may contribute to the eutrophication of water supplies.
Forms corrosive mixtures with water even if diluted.
Avoid transfer into the environment.

13 Disposal considerations

· **Waste treatment methods**

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

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

14 Transport information

· **UN-Number** · **DOT, IMDG, IATA**	none
· **UN proper shipping name** · **DOT, IMDG, IATA**	none
· **Transport hazard class(es)** · **DOT, IMDG, IATA** · **Class**	none
· **Packing group** · **DOT, IMDG, IATA**	none
· **Environmental hazards:**	Not applicable.
· **Special precautions for user**	Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	Not dangerous according to the above specifications.

* 15 Regulatory information

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

· **Section 355 (Extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **New Jersey Right-to-Know List:**

CAS: 12125-02-9	ammonium chloride

· **New Jersey Special Hazardous Substance List:**
None of the ingredients is listed.

· **Pennsylvania Right-to-Know List:**

CAS: 12125-02-9	ammonium chloride
CAS: 7757-82-6	sodium sulphate

· **Pennsylvania Special Hazardous Substance List:**

CAS: 12125-02-9	ammonium chloride	E
CAS: 7757-82-6	sodium sulphate	E

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· **EPA (Environmental Protection Agency)**

CAS: 10043-35-3	boric acid	I (oral)

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **Information about limitation of use:**
Employment restrictions concerning pregnant and lactating women must be observed.
Employment restrictions concerning young persons must be observed.

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

* 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**
H302 Harmful if swallowed.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H360 May damage fertility or the unborn child.

· **Recommended restriction of use:** professional/industrial use only
· **Date of preparation / last revision** 04/12/2018 / 51

· **Abbreviations and acronyms:**
OECD: Organisation for Economic Co-operation and Development
STOT: specific target organ toxicity
SE: single exposure
RE: repeated exposure
EC50: half maximal effective concentration
IC50: hallf maximal inhibitory concentration
NOEL or NOEC: No Observed Effect Level or Concentration
ACGIH® - American Conference of Governmental Industrial Hygienists
•A1 - Confirmed human carcinogen
•A2 - Suspected human carcinogen
•A3 - Confirmed animal carcinogen with unknown relevance to humans
•A4 - Not classifiable as a human carcinogen
•A5 - Not suspected as a human carcinogen
IARC - International Agency for Research on Cancer
•Group 1 - Carcinogenic to humans
•Group 2A - Probably carcinogenic to humans
•Group 2B - Possibly carcinogenic to humans
•Group 3 - Not classifiable as to carcinogenicity to humans
•Group 4 - Probably not carcinogenic to humans
NTP - National Toxicology Program, U.S. Department of Health and Human Services
•Group K - Known to be Human Carcinogens
•Group R - Reasonably Anticipated to be Human Carcinogens
ADR: Accord européen sur le transport 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
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Tox. 4: Acute toxicity – Category 4
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Repr. 1B: Reproductive toxicity – Category 1B

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

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NTP (National Toxicology Program)

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