

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

Printing date 11/14/2017

Reviewed on 11/14/2017

1 Identification

- **Product identifier**
- **Trade name:** Persulfate RGT for CR powder
- **Catalogue number:** 00537309, 537300, 4537300
- **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

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.



GHS05 Corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.

- **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
potassium persulphate
- **Hazard statements**
H318 Causes serious eye damage.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
- **Precautionary statements**
P261 Avoid breathing dust.
P302+P352 If on skin: Wash with plenty of water.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.

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P310 Immediately call a poison center/doctor.
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P342+P311 If experiencing respiratory symptoms: Call a poison center/doctor.

• **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: 7681-38-1 EINECS: 231-665-7 Index number: 016-046-00-X RTECS: VZ1860000	sodium bisulfate ⚠ Eye Dam. 1, H318	25–35%
CAS: 7727-21-1 EINECS: 231-781-8 Index number: 016-061-00-1 RTECS: SE0400000	potassium persulphate ⚠ Ox. Sol. 3, H272; ⚠ Resp. Sens. 1, H334; ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	1–≤2.5%

• **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 or oxygen; call for doctor.
- **After skin contact:**
Immediately rinse with plenty of water.
If skin irritation continues, consult a doctor.
If skin irritation or rash occurs: Get medical advice/attention.
- **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 in case of complaints.
- **Most important symptoms and effects, both acute and delayed**
burns
after resorption:
gastric or intestinal disorders
sickness
vomiting
after swallowing of large amounts:
diarrhoea
irritations
ataxia (impaired locomotor coordination)
drop in temperature
cardiovascular disorders
- **Danger:**
Danger of pulmonary edema.
risk of airways sensitization
- **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.

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Sulfur oxides (SOx)

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.

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:**

Thorough dedusting.

Prevent formation of dust.

- **Hygiene measures:**

Do not inhale dust / smoke / mist.

Avoid contact with the skin.

Avoid contact with the eyes.

Take off immediately all contaminated clothing.

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.

- **Information about storage in one common storage facility:** Store away from oxidizing agents.

- **Further information about storage conditions:**

Store in cool, dry conditions in well sealed receptacles.

Protect from heat and direct sunlight.

Protect from exposure to the light.

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.

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8 Exposure controls/personal protection

- Control parameters

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

CAS: 7727-21-1 potassium persulphate

TLV (USA)	Long-term value: 0.1 mg/m ³ as Persulfates
EL (Canada)	Long-term value: 0.1 mg/m ³ as persulfate
EV (Canada)	Long-term value: 0.1 mg/m ³

- 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 P2

- 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

- 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:	Powder
Color:	White

- Odor:** Odorless

- Odor threshold:** Not applicable.

- pH-value (8.2 g/l) at 20 °C (68 °F):** 2

- Melting point/freezing point:** Not determined.

- Initial boiling point and boiling range:** 891 °C (1635.8 °F)

- Flash point:** Not applicable.

- Flammability (solid, gas):** The product is not combustible.

- Decomposition temperature:** Not determined.

- 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 at 20 °C (68 °F):** 2,71 g/cm³ (22.61 lbs/gal)

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· 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 %
· 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.
 - Liberates acid in contact with water or alcohol.
 - Reacts with strong alkalis and oxidizing agents.
- **Conditions to avoid** Strong heating (decomposition)
- **Incompatible materials:**
 - metals
 - aluminum
- **Hazardous decomposition products:**
 - oxygen
 - see section 5

11 Toxicological information

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

· LD/LC50 values that are relevant for classification:

CAS: 7681-38-1 sodium bisulfate		
Oral	LD50	2490 mg/kg (rat) (IUCLID)
Dermal	LD50.	>2000 mg/kg (rabbit)
CAS: 7727-21-1 potassium persulphate		
Oral	LD50	802 mg/kg (rat) (RTECS)
Dermal	LD50	>10000 mg/kg (rabbit)

- **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 7727-21-1: chronic: dermatitis

CAS: 7681-38-1 sodium bisulfate		
Irritation of skin	OECD 404	(rabbit: no irritation)
Irritation of eyes	OECD 405	(rabbit: severe irritations)

- **Sensitization:**
 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 - May cause an allergic skin reaction.

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- **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:

- **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.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

- CAS: 7681-38-1 sodium bisulfate**

EC50	190 mg/l/48h (Daphnia magna) (IUCLID)
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- CAS: 7727-21-1 potassium persulphate**

EC50	120 mg/l/48h (Daphnia magna)
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- **Bacterial toxicity:**

sulfates toxic > 2.5 g/l

- CAS: 7681-38-1 sodium bisulfate**

EC10	>1000 mg/l (Pseudomonas putida) (16 h)
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- CAS: 7727-21-1 potassium persulphate**

EC50	83.7 mg/l (Bacterial toxicity) (72h)
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- **Other information:**

Toxic for fish:

sulfates > 7 g/l

- **Persistence and degradability .**

- **Other information:**

Mixture of inorganic compounds.

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

- **Bioaccumulative potential** No further relevant information available.

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

- **Other adverse effects**

Reacts with water to form toxic decomposition products.

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.

- **Uncleaned packagings:**

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

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- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

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: 7727-21-1 potassium persulphate
· New Jersey Special Hazardous Substance List:	None of the ingredients is listed.
· Pennsylvania Right-to-Know List:	CAS: 7757-82-6 sodium sulphate CAS: 7727-21-1 potassium persulphate
· Pennsylvania Special Hazardous Substance List:	CAS: 7757-82-6 sodium sulphate
· EPA (Environmental Protection Agency)	None of the ingredients is listed.

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

None of the ingredients is listed.

• **Information about limitation of use:** 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

H272 May intensify fire; oxidizer.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation.

• **Date of preparation / last revision** 11/14/2017 / 18

• 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: half 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

Ox. Sol. 3: Oxidizing solids – Category 3

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

Resp. Sens. 1: Respiratory sensitisation – Category 1

Skin Sens. 1: Skin sensitisation – Category 1

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

• **Sources** Data arise from safety data sheets, reference works and literature.