

Safety Data Sheet

acc. to OSHA HCS (HazCom 2012)

Printing date 08/10/2017

Reviewed on 08/10/2017

1 Identification

- **Product identifier**
- **Trade name:** NitraX Reagent Tube, Reagent A
- **Catalogue number:** ACR007
- **Application of the substance / the mixture:** Reagent for water analysis
- **Manufacturer/Supplier:**
Thermo Fisher Scientific
Water and Lab Products
22 Alpha Road
Chelmsford, MA 01824, USA
phone: 1-978-232-6000
Made in Germany
- **Informing Department:** usbev.customerservice@thermofisherscientific.com
- **Emergency telephone number:**
24 hr Emergency
CHEMTREC®
Within USA and Canada: 1-800-424-9300
Outside USA and Canada: 1-703-527-3887
(collect calls accepted)

2 Hazard(s) identification

- **Classification of the substance or mixture**



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.

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



GHS05

- **Signal word** Danger
- **Hazard-determining components of labeling:**
sulphuric acid 86.2 %
- **Hazard statements**
H290 May be corrosive to metals.
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.
P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a doctor.

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- **Other hazards** Acid burns have to be treated immediately, as it may otherwise cause badly curing wounds.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**

- **Description:** sulfuric acid solution

- **Composition and Information on Ingredients:**

Cancer Status IARC: Strong inorganic acid mists containing sulphuric acid can cause cancer.

Percent ranges are used due to the confidential product information.

CAS: 7664-93-9 EINECS: 231-639-5 Index number: 016-020-00-8 RTECS: WS5600000	sulphuric acid	 Met. Corr. 1, H290; Skin Corr. 1A, H314	80-90%
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- **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; consult doctor in case of complaints.

- **After skin contact:**

Immediately wash with polyethylene glycol 400.

Immediately rinse with plenty 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; immediately call for medical help.

- **Most important symptoms and effects, both acute and delayed**

burns

after inhalation:

damage to the affected mucous membranes possible

coughing

breathing difficulty

after swallowing:

strong caustic effect

vomiting

diarrhoea

pain

narcotic conditions

cramps

- **Danger:**

Danger of circulatory collapse.

Danger of gastric perforation.

Danger of pulmonary edema.

- **Indication of any immediate medical attention and special treatment needed:**

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

Later observation for pneumonia and pulmonary edema.

5 Fire-fighting measures

- **Extinguishing media**

- **Suitable extinguishing agents:**

Use fire fighting measures that suit the environment.

CO₂, sand, extinguishing powder.

- **For safety reasons unsuitable extinguishing agents:**

Water

--> exothermic reaction.

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- **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:

Sulfur oxides (SO_x)

- **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

Use respiratory protective device against the effects of fumes/dust/aerosol.

- **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.

Neutralize with diluted sodium hydroxide solution.

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

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:**

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 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 metals.

Do not store together with alkalis (caustic solutions).

Store away from flammable substances.

- **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)

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· **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:**

CAS: 7664-93-9 sulphuric acid

EL (Canada)	Long-term value: 0.2 mg/m ³ ACGIH A2; IARC 1
EV (Canada)	Long-term value: 0.2 mg/m ³
PEL (USA)	Long-term value: 1 mg/m ³
REL (USA)	Long-term value: 1 mg/m ³
TLV (USA)	Long-term value: 0.2* mg/m ³ *as thoracic fraction

· **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:** Combination filter B-P2

· **Protection of hands:**

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**

Butyl rubber, BR

Fluorocarbon rubber (Viton)

Recommended thickness of the material: ≥ 0.7 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:** Acid resistant protective 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:	Fluid
Color:	Colorless

· **Odor:** Odorless

· **Odor threshold:** Not applicable.

· **pH-value at 20°C (68 °F):** < 1
Strongly acidic

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

· **Initial boiling point and boiling range:** Not determined.

· **Flash point:** Not applicable.

· **Flammability (solid, gas):** Not applicable.

· **Decomposition temperature:** Not determined.

· **Auto-ignition temperature:** Product is not self-igniting.

· **Danger of explosion:** Product does not present an explosion hazard.

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Trade name: NitraX Reagent Tube, Reagent A

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· Flammability or explosive limits:	
Lower:	Not applicable.
Upper:	Not applicable.
· Oxidizing properties:	Oxidizing potential
· Vapor Pressure:	Not determined.
· Density at 20°C (68 °F):	1.8 g/cm ³ (15.021 lbs/gal)
· Relative density:	Not determined.
· Vapor density:	Not determined.
· Evaporation rate:	Not determined.
· Solubility(ies)	
Water:	Fully miscible.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	Not determined.
· Solvent content:	
Organic solvents:	0.0 %
Water:	> 10 %
· 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**
 - Corrosive action on metals.
 - Reacts with metals forming hydrogen (Danger of explosion!)
 - When diluting, always add acid to water, never vice versa.
 - Diluting or dissolving in water always causes rapid heating.
 - Reacts with reducing agents.
 - Reacts with acids, alkalis and oxidizing agents.
 - Reacts with ammonia (NH₃).
 - Reacts with halogenated compounds.
 - Reacts with peroxides.
- **Conditions to avoid** Strong heating (decomposition)
- **Incompatible materials:**
 - metals
 - combustible materials
 - organic solvents
- **Hazardous decomposition products:** 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: 7664-93-9 sulphuric acid			
Oral	LD50	2140 mg/kg (rat) (IUCLID)	
Inhalative	LC 50	510 (pure) mg/m ³ /2h (rat) IUCLID	

- **Primary irritant effect:**
- **on the skin:** Causes severe skin burns.
- **on the eye:**
 - Causes serious eye damage.
 - Risk of blindness!
- **Sensitization:** Based on available data, the classification criteria are not met.

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· IARC (International Agency for Research on Cancer)		
CAS: 7664-93-9	sulphuric acid	1
· NTP (National Toxicology Program)		
CAS: 7664-93-9	sulphuric acid	K
· OSHA-Ca (Occupational Safety & Health Administration)		
None of the ingredients is listed.		
· Other information: see section 8 / 15 Cancer Status of Sulfuric acid: The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mists containing sulfuric acid" as a known human carcinogen, (IARC category 1). This classification applies only to mists containing sulfuric acid and not to sulfuric acid or sulfuric acid solutions. A2 (Suspected for humans) by ACGIH		
· CMR effects (carcinogenicity, 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.		
· 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. Sulfuric acid: erosion of the teeth, cancer		

12 Ecological information

· Toxicity	
· 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: sulfates toxic > 2.5 g/l	
· 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 Harmful effect due to pH shift. 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.	
· Uncleaned packagings:	
· Recommendation: Disposal must be made according to official regulations.	

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Trade name: NitraX Reagent Tube, Reagent A

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· Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

· UN-Number	UN1830
· DOT, IMDG, IATA	
· UN proper shipping name	Sulfuric acid
· DOT	SULPHURIC ACID
· IMDG, IATA	
· Transport hazard class(es)	
· DOT	
	
· Class	8 Corrosive substances
· Label	8
· IMDG, IATA	
	
· Class	8 Corrosive substances
· Label	8
· Packing group	
· DOT, IMDG, IATA	II
· Environmental hazards:	Not applicable.
· Special precautions for user	Warning: Corrosive substances
· Danger code (Kemler):	80
· EMS Number:	F-A,S-B
· Segregation groups	Acids
· Stowage Category	E
· Stowage Code	SW15 For metal drums, stowage category B.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 1 L On cargo aircraft only: 30 L
· Limited quantity (LQ):	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· IMDG	
· 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

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15 Regulatory information

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

· Section 355 (Extremely hazardous substances):

CAS: 7664-93-9 sulphuric acid

· Section 313 (Specific toxic chemical listings):

CAS: 7664-93-9 sulphuric acid

· 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: 7664-93-9 sulphuric acid

· New Jersey Special Hazardous Substance List:

CAS: 7664-93-9 sulphuric acid

CA, CO, R2

· Pennsylvania Right-to-Know List:

CAS: 7664-93-9 sulphuric acid

· Pennsylvania Special Hazardous Substance List:

CAS: 7664-93-9 sulphuric acid

E

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· 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

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

- Date of preparation / last revision 08/10/2017 / -

· Abbreviations and acronyms:

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

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•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

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

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)

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1 Identification

- **Product identifier**
- **Trade name:** Nitrate Chromotropic, Reagent B
- **Catalogue number:** ACR007, ACR007-1
- **Application of the substance / the mixture:** Reagent for water analysis
- **Manufacturer/Supplier:**
Thermo Fisher Scientific
Water and Lab Products
22 Alpha Road
Chelmsford, MA 01824, USA
phone: 1-978-232-6000
Made in Germany
- **Informing Department:** usbev.customerservice@thermofisherscientific.com
- **Emergency telephone number:**
24 hr Emergency
CHEMTREC®
Within USA and Canada: 1-800-424-9300
Outside USA and Canada: 1-703-527-3887
(collect calls accepted)

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Carc. 1A H350 May cause cancer.

STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure. Route of exposure: Inhalation.

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



GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**
Quartz (SiO₂)
- **Hazard statements**
H350 May cause cancer.
H372 Causes damage to organs through prolonged or repeated exposure. Route of exposure: Inhalation.
- **Precautionary statements**
P201 Obtain special instructions before use.
P260 Do not breathe dust.
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.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P405 Store locked up.

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Trade name: Nitrate Chromotropic, Reagent B

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

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** Mixture of organic and inorganic compounds

· **Composition and Information on Ingredients:**

Percent ranges are used due to the confidential product information.

CAS: 14808-60-7 EINECS: 238-878-4 RTECS: VV 7330000	Quartz (SiO ₂) ☠ Carc. 1A, H350; STOT RE 1, H372	80-90%
CAS: 57-13-6 EINECS: 200-315-5 RTECS: YR 6250000	urea	10-20%
CAS: 5808-22-0 EINECS: 204-972-9	Disodium 4,5-dihydroxynaphthalene-2,7-disulphonate ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	2.5-5%

· **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.

Seek medical treatment.

· **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

· **After eye contact:** Rinse opened eye for several minutes (at least 15 min) under running water. Then consult a doctor.

· **After swallowing:**

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

Seek medical treatment.

· **Information for doctor:** Sulfites are strong sensitizers

· **Most important symptoms and effects, both acute and delayed**

after inhalation:

mucous membrane irritation

coughing

breathing difficulty

after swallowing:

sickness

vomiting

· **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:

Nitrogen oxides (NO_x)

Sulfur oxides (SO_x)

NH₃

· **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.

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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:**
Prevent formation of dust.
Thorough dedusting.
- **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.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Store under lock and key and with access restricted to technical experts or their assistants only.
Protect from heat and direct sunlight.
Protect from exposure to the light.
Store in dry conditions.
Protect from humidity and water.
- **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 product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

CAS: 14808-60-7 Quartz (SiO₂)

EL (Canada)	Long-term value: 0.025 mg/m ³ ACGIH A2; IARC 1
EV (Canada)	Long-term value: 0.10* mg/m ³ *respirable fraction
PEL (USA)	see Quartz listing

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REL (USA)	Long-term value: 0.05* mg/m ³ *respirable dust; See Pocket Guide App. A
TLV (USA)	Long-term value: 0.025* mg/m ³ *as respirable fraction
CAS: 57-13-6 urea	
WEEL (USA)	Long-term value: 10 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 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:** Safety glasses
 - **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:	Light brown
· Odor:	Weak, characteristic
· Odor threshold:	Not determined.
· pH-value (15 g/l) at 20°C (68 °F):	7.2
· 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:	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:	Not determined.
· Relative density:	Not determined.
· Vapor density:	Not applicable.
· Evaporation rate:	Not applicable.

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acc. to OSHA HCS (HazCom 2012)

Printing date 08/10/2017

Reviewed on 08/10/2017

Trade name: Nitrate Chromotropic, Reagent B

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· Solubility(ies) Water:	Partially insoluble.
· Partition coefficient (n-octanol/water):	Not applicable.
· Viscosity:	Not applicable.
· Solvent content: Organic solvents: Solids content:	0.0 % 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** Reacts with strong alkalis and oxidizing agents.
- **Conditions to avoid** Strong heating (decomposition)
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:**
Ammonia (NH₃)
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.

· LD/LC50 values that are relevant for classification:

CAS: 57-13-6 urea

Oral	LD50	8,471 mg/kg (rat)
Dermal	LD50	8,200 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** Based on available data, the classification criteria are not met.
- **on the eye:** Based on available data, the classification criteria are not met.
- **Sensitization:** Based on available data, the classification criteria are not met.

· IARC (International Agency for Research on Cancer)

CAS: 14808-60-7	Quartz (SiO ₂)	1
CAS: 999-99-9	one or more ingredient(s) Group 3: Not classifiable as to carcinogenicity to humans	

· NTP (National Toxicology Program)

CAS: 14808-60-7	Quartz (SiO ₂)	K
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· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

- **Other information:** see section 8 / 15
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):**
The following statements refer to the mixture:
Carc. 1A
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** May cause cancer.
- **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**
Causes damage to organs through prolonged or repeated exposure. Route of exposure: Inhalation.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

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Additional toxicological information:

CAS 14808-60-7 Quartz, chronic toxic effect: silicosis

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

Experience with humans: CAS 14808-60-7: May cause lung damages.

12 Ecological information

Toxicity

Aquatic toxicity:

CAS: 57-13-6 urea

EC50 >10,000 mg/l/24h (Daphnia magna)
(IUCLID)LC50 >6,810 mg/l/96h (gold orfe)
(IUCLID)

Bacterial toxicity:

CAS: 57-13-6 urea

EC5 >10,000 mg/l (Pseudomonas putida) (16 h)

Persistence and degradability

CAS: 57-13-6 urea

OECD 302 B 96 (.) (Zahn-Wellens / EMPA Test)

Bioaccumulative potential

Pow = n-octanol/wasser partition coefficient

log Pow > 3 = May be accumulated in organism

log Pow 1-3 = Not worth-mentioning accumulating in organisms.

log Pow < 1 = Does not accumulate in organisms.

CAS: 57-13-6 urea

log Pow ≤1.59 (.) (OECD 107, 25°C)

CAS: 5808-22-0 Disodium 4,5-dihydroxynaphthalene-2,7-disulphonate

log Pow ≤4.48 (.) (calculated)
(anhydrous substance)

Mobility in soil No further relevant information available.

Other adverse effects 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.

Disposal must be made according to official regulations.

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

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Trade name: Nitrate Chromotropic, Reagent B

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· 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:
CAS: 14808-60-7 Quartz (SiO ₂)
· 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: 14808-60-7 Quartz (SiO ₂)
· New Jersey Special Hazardous Substance List:
CAS: 14808-60-7 Quartz (SiO ₂)
CA
· Pennsylvania Right-to-Know List:
CAS: 14808-60-7 Quartz (SiO ₂)
· Pennsylvania Special Hazardous Substance List:
None of the ingredients is listed.
· EPA (Environmental Protection Agency)
CAS: 57-13-6 urea
II
· NIOSH-Ca (National Institute for Occupational Safety and Health)
CAS: 14808-60-7 Quartz (SiO ₂)
· 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**
H315 Causes skin irritation.
H319 Causes serious eye irritation.

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Trade name: Nitrate Chromotropic, Reagent B

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H335 May cause respiratory irritation.

H350 May cause cancer.

H372 Causes damage to organs through prolonged or repeated exposure. Route of exposure: Inhalation.

· **Recommended restriction of use:** professional/industrial use only· **Date of preparation / last revision** 08/10/2017 / -· **Abbreviations and acronyms:**

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

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

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

Carc. 1A: Carcinogenicity – Category 1A

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

STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

· **Sources**

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

IUCLID (International Uniform Chemical Information Database)

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