Lovibond® Water Testing

Tintometer® Group



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

Printing date 04/24/2024 Reviewed on 04/24/2024

1 Identification

- · Product identifier
- · Trade name: Sulfate No.2
- · Catalogue number: 00515231, 515230BT, 4515230BT, 515231BT, 4515231BT, 00515239
- · 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

Toxic to Reproduction 1B H360 May damage fertility or the unborn child.



Eye Irritation 2A

H319 Causes serious eye irritation.

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





GHS07 GHS08

- · Signal word Danger
- Hazard-determining components of labeling:

disodium tetraborate, anhydrous

boric acid

· Hazard statements

H319 Causes serious eye irritation.

H360 May damage fertility or the unborn child.

· Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection.

P201 Obtain special instructions before use.

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.

· Other hazards No further relevant information available.

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Printing date 04/24/2024 Reviewed on 04/24/2024

Trade name: Sulfate No.2

(Contd. of page 1)

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: 1330-43-4 EINECS: 215-540-4 Index number: 005-011-00-4 RTECS: ED4588000	disodium tetraborate, anhydrous Toxic to Reproduction 1B, H360; Eye Irritation 2A, H319	50–60%
CAS: 9004-34-6 EINECS: 232-674-9 RTECS: FJ5691460	cellulose	25–35%
CAS: 10043-35-3 EINECS: 233-139-2 Index number: 005-007-00-2 RTECS: ED 4550000	boric acid Toxic to Reproduction 1B, H360	0.1–≤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.

Get medical advice/attention.

· After skin contact:

Immediately wash with water and soap and rinse thoroughly.

Get medical advice/attention.

· 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.

Most important symptoms and effects, both acute and delayed

irritations resorption

after inhalation:

mucosal irritations, cough, breathing difficulty

after swallowing:

sickness

vomiting

diarrhoea

after absorption of large amounts:

cardiovascular disorders

fatigue

CNS disorders

ataxia (impaired locomotor coordination)

cramps

· 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:

Carbon monoxide (CO) and carbon dioxide (CO₂)

- Advice for firefighters
- Protective equipment:

Wear self-contained respiratory protective device.

(Contd. on page 3)

Printing date 04/24/2024 Reviewed on 04/24/2024

Trade name: Sulfate No.2

(Contd. of page 2)

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 section 13.

Reference to other sections

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

- Precautions for safe handling
- · Advice on safe handling: Provide suction extractors if dust is formed.
- · 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
- Requirements to be met by storerooms and receptacles: Store in a cool location.
- Information about storage in one common storage facility: see chapter 10
- Further information about storage conditions:

Store locked up or with access restricted to technical experts or their assistants.

Ensure that persons do not handle until all safety precautions have been read and understood.

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.

- · 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

٠	Com	pone	nts	١ :	with	limit	valu	ıes	th	at r	equire	m	onitoring	at the	workpla	ice:
				_												

CAS: 1330-43-4 disodium tetraborate, anhydrous
REL (USA) | Long-term value: 1 mg/m³

anhydrous

TLV (USA) Short-term value: 6* mg/m³

Long-term value: 2* mg/m³
*as inhalable fraction, A4

(Contd. on page 4)

Printing date 04/24/2024 Reviewed on 04/24/2024

Trade name: Sulfate No.2

	(Co	ontd. of page 3)
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	
CAS: 9004-34	4-6 cellulose	
PEL (USA)	Long-term value: 15* 5** mg/m³ *total dust **respirable fraction	
REL (USA)	Long-term value: 10* 5** mg/m³ *total dust **respirable fraction	
TLV (USA)	Long-term value: 10 mg/m³	
EL (Canada)	Long-term value: 10* 3** mg/m³ *total dust, **respirable fraction	
EV (Canada)	Long-term value: 10 mg/m³ paper fibre, total dust	
CAS: 10043-	35-3 boric acid	
TLV (USA)	Short-term value: 6* mg/m³ Long-term value: 2* mg/m³ *as inhalable fraction, A4	
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:

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

- · Breathing equipment: Use respiratory protective device against the effects of fume/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

Use protective goggles that have been tested and approved in accordance with government standards (like NIOSH).

· 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: pink
Odor: Odorless
Odor threshold: Not applicable.

Printing date 04/24/2024 Reviewed on 04/24/2024

Trade name: Sulfate No.2

(Contd. of page 4)

• pH-value at 20°C (68°F): 9.2

Melting point/freezing point:
 Initial boiling point and boiling range:
 Flash point:
 Not determined.
 Not applicable.

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

Auto igniting: Not applicable (solid).

• Decomposition temperature: Not determined.

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

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

Not applicable.

Flammability or explosive limits:

Upper: Not applicable (solid).
Oxidizing properties: none
Vapor Pressure: Not applicable (solid).
Density: Not determined.

Density: Not determined.
Relative density: Not determined.
Vapor density: Not applicable.
Evaporation rate: Not applicable.

· Solubility(ies)

Lower:

Water: Partially insoluble.
 Partition coefficient (n-octanol/water): Not applicable (mixture).
 Viscosity: Not applicable.
 Kinematic: Not applicable (solid).

· Other information

· Solids content: 100 %

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 acids.

- Reacts with strong oxidizing agents.
- · Conditions to avoid Strong heating (decomposition)
- · Incompatible materials: No further relevant information available.
- · 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.

· Acute toxicity estimate (ATE	wix) - Calculation method:
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Inhalative GHS ATE_(MIX) 55.6 mg/l/4h (rat)

· LD/LC50 values that are relevant for classification:

CAS: 9004-34-6 cellulose								
Oral	LD50.	>5000 mg/kg (rat)						
Dermal	LD50	>2000 mg/kg (rabb						

>2000 mg/kg (rabbit) (RTECS, limit test)

Inhalative LC50/4h >5.8 mg/l /4h (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.)

LD₀ 1500 mg/kg (child)

(MERCK)

(Contd. on page 6)

Printing date 04/24/2024 Reviewed on 04/24/2024

Trade name: Sulfate No.2

(Contd. of page 5) 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 eve: Causes serious eve irritation.

· Information on	· Information on components:					
CAS: 1330-43-4	disodium te	etraborate, anhydrous				
Irritation of skin	Irritation of skin OECD 404 (rabbit: no irritation) (Registrant, ECHA, Sodium tetraborate pentahydrate)					
Irritation of eyes		(rabbit: irritation) (Registrant, ECHA, Sodium tetraborate pentahydrate)				
CAS: 9004-34-6	cellulose					
Irritation of skin	OECD 404	(rabbit: no irritation)				
Irritation of eyes	OECD 492	(rabbit: no irritation)				
CAS: 10043-35-	CAS: 10043-35-3 boric acid					
Irritation of skin	OECD 404	(rabbit: no irritation) (Registrant, ECHA)				
Irritation of eyes	OECD 492	(rabbit: slight irritation) (IUCLID)				

- · Sensitization: Based on available data, the classification criteria are not met.
- Information on components:

CAS: 9004-34-6 cellulose

Sensitization OECD 406 (guinea pig: negative)

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:

Toxic to Reproduction 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)

CAS 1330-43-4 Borax:

Reproductive Toxicity:

Numerous studies on different species have been carried out with boric acid and borates. From this it was concluded that reproductive toxicity appears to be the critical effect. mutagenicity:

Borates and boric acid did not show any genotoxic effects in a series of microbiological investigations and tests on cell preparations that have been carried out to date, as well as in an in-vivo test.

Carcinogenicity:

A previous carcinogenicity study on rats and mice with boric acid (oral application) gave no indication of a carcinogenic potential of boric acid or borates.

(Contd. on page 7)

Printing date 04/24/2024 Reviewed on 04/24/2024

Trade name: Sulfate No.2

(Contd. of page 6)

OECD 414: Teratogenicity testing OECD 473: Mutagenicity testing

OECD 471, 474, 476, 487: Germ cell mutagenicity testing

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 1330-43-4/ 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.

CAS: 10043-35-3 boric acid

(source: GESTIS)

Main toxic effects:

Acute: Slightly irritating to the eyes and skin; gastrointestinal disturbances, CNS-effects and (later) skin damage after massive poisoning

Chronic: Irritation to the mucous membranes following inhalative exposure, effects to the gastrointestinal tract and CNS

Further Information (Merck):

"Toxicity reported for borates in humans: ingestion or absorption may cause nausea, vomiting, diarrhea, abdominal cramps, anderythematous lesions on the skin and mucous membranes.

Other symptoms include: circulatory collapse, tachycardia, cyanosis, delirium, convulsions, and coma.

Death has been reported to occur in infants from less than 5 grams and in adults from 5 to 20 grams."

"Liver - Irregularities - Based on Human Evidence"

· Other information Other dangerous properties can not be excluded.

12 Ecological information

· Toxicity

· Aquatic toxicity: CAS: 1330-43-4 disodium tetraborate, anhydrous

LC50 | 1085-1402 mg/l/48h (Daphnia magna)

(IUCLID)

IC50 158 mg/l/96 h (Desmodesmus subspicatus)

(IUCLID)

LC50 340 mg/l/96h (fish)

(IUCLID)

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:

CAS: 1330-43-4 disodium tetraborate, anhydrous

EC5 1.3 mg/l (Entosiphon sulcatum) (72h)

- Persistence and degradability No further relevant information available.
- Bioaccumulative potential

Pow = n-octanol/wasser partition coefficient

log Pow < 1 = Does not accumulate in organisms.

CAS: 10043-35-3 boric acid

log Pow -1.09 (.) (OECD 107, 22°C)

(Merck)

Mobility in soil No further relevant information available.

(Contd. on page 8)

Printing date 04/24/2024 Reviewed on 04/24/2024

none

Trade name: Sulfate No.2

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(Contd. of page 7)

· 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. Hand over to hazardous waste disposers.

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

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· DOT, IMDG, IATA

· 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 components have the value ACTIVE.

· Hazardous Air Pollutants

None of the ingredients is 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.

(Contd. on page 9)

Printing date 04/24/2024 Reviewed on 04/24/2024

Trade name: Sulfate No.2

(Contd. of page 8)

New Jersey Right-to-Know Lis	st:
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CAS: 9004-34-6 cellulose

New Jersey Special Hazardous Substance List:

None of the ingredients is listed.

· Pennsylvania Right-to-Know List:

CAS: 1330-43-4 disodium tetraborate, anhydrous

CAS: 9004-34-6 cellulose

Pennsylvania Special Hazardous Substance List:

None of the ingredients is listed.

· EPA (Environmental Protection Agency)

•	- -:	
CAS: 1330-43-4	disodium tetraborate, anhydrous	I (oral)
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:

Observe national regulations where applicable:

Employment restrictions concerning young persons must be observed.

Employment restrictions concerning pregnant and lactating women 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

H319 Causes serious eve irritation.

H360 May damage fertility or the unborn child.

- · Recommended restriction of use: professional/industrial use only
- · Version number / date of revision: 32 / 04/24/2024

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

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**

Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A

(Contd. on page 10)

Printing date 04/24/2024 Reviewed on 04/24/2024

Trade name: Sulfate No.2

Toxic to Reproduction 1B: Reproductive toxicity – Category 1B

(Contd. of page 9)

· Sources

Data arise from safety data sheets, reference works and literature. ECHA: European CHemicals Agency http://echa.europa.eu

GESTIS- Stoffdatenbank (Substance Database, Germany)

IUCLID (International Uniform Chemical Information Database)

RTECS (Registry of Toxic Effects of Chemical Substances)

NTP (National Toxicology Program)

* Data compared to the previous version altered.

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