

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 10.06.2020

Version 5.9

SECTION 1. Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Catalogue No.	101746
Product name	Sulfite Test Method: photometric 1.0 - 60.0 mg/l SO ₃ ²⁻ 0.8 - 48.0 mg/l SO ₂ Spectroquant®
	SO ₃ -1
REACH Registration Number	01-2119486775-20-XXXX
CAS-No.	6381-92-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Reagent for analysis For additional information on uses please refer to the Merck Chemicals portal (www.merckgroup.com).
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1.3 Details of the supplier of the safety data sheet

Company	Merck KGaA * 64271 Darmstadt * Germany * Phone: +49 6151 72-0
Responsible Department	LS-QHC * e-mail: prodsafe@merckgroup.com

1.4 Emergency telephone number **Please contact the regional company representation in your country.****SECTION 2. Hazards identification****2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Acute toxicity, Category 4, Inhalation, H332

Specific target organ toxicity - repeated exposure, Category 2, Inhalation, Respiratory Tract, H373

For the full text of the H-Statements mentioned in this Section, see Section 16.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101746
Product name Sulfite Test Method: photometric 1.0 - 60.0 mg/l SO₃²⁻
0.8 - 48.0 mg/l SO₂ Spectroquant®
SO₃-1

2.2 Label elements

Labelling.(REGULATION (EC) No 1272/2008)

Hazard pictograms



Signal word
Warning

Hazard statements

H332 Harmful if inhaled.

H373 May cause damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled.

Precautionary statements

Response

P314 Get medical advice/ attention if you feel unwell.

Reduced labelling (≤125 ml)

Hazard pictograms



Signal word
Warning

Contains: Disodium dihydrogen ethylenediaminetetraacetate dihydrate

CAS-No. 6381-92-6

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

3.1 Substance

Formula	C ₁₀ H ₁₄ N ₂ O ₈ *2Na*2H ₂ O (Hill)	C ₁₀ H ₁₄ N ₂ Na ₂ O ₈ *2H ₂ O
EC-No.	205-358-3	
Molar mass	372,24 g/mol	

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101746
Product name Sulfite Test Method: photometric 1.0 - 60.0 mg/l SO₃²⁻
0.8 - 48.0 mg/l SO₂ Spectroquant®
SO₃-1

Hazardous components (REGULATION (EC) No 1272/2008)

Chemical name (Concentration)

CAS-No.	Registration number	Classification
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Disodium dihydrogen ethylenediaminetetraacetate dihydrate ($\geq 80\%$ - $\leq 100\%$)

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

6381-92-6	01-2119486775-	
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	20-XXXX	
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Acute toxicity, Category 4, H332

Specific target organ toxicity - repeated exposure,

Category 2, H373

For the full text of the H-Statements mentioned in this Section, see Section 16.

3.2 Mixture

Not applicable

SECTION 4. First aid measures

4.1 Description of first aid measures

After inhalation: fresh air. Call in physician.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

After eye contact: rinse out with plenty of water. Remove contact lenses.

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

We have no description of any symptoms of toxicity.

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water, Foam, Carbon dioxide (CO₂), Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Combustible.

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

Fire may cause evolution of:
nitrogen oxides

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101746
Product name Sulfito Test Method: photometric 1.0 - 60.0 mg/l SO₃²⁻
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SO₃-1

5.3 Advice for firefighters

Special protective equipment for firefighters

In the event of fire, wear self-contained breathing apparatus.

Further information

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid inhalation of vapours/aerosols or dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with suitable equipment. Dispose of properly. Clean up affected area. Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

Indications about waste treatment see section 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Observe label precautions.

Work under hood. Do not inhale substance/mixture.

Hygiene measures

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

No aluminium, tin, or zinc containers.

Storage conditions

Tightly closed.

Recommended storage temperature see product label.

The data applies to the entire pack.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101746
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7.3 Specific end use(s)

See exposure scenario in the Annex to this MSDS.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

Derived No Effect Level (DNEL)

Worker DNEL, acute	Local effects	inhalation	3 mg/m ³
Worker DNEL, longterm	Local effects	inhalation	1,5 mg/m ³
Consumer DNEL, acute	Local effects	inhalation	1,2 mg/m ³
Consumer DNEL, longterm	Local effects	inhalation	0,6 mg/m ³
Consumer DNEL, longterm	Systemic effects	oral	25 mg/kg Body weight

Predicted No Effect Concentration (PNEC)

PNEC Fresh water	2,2 mg/l
PNEC Marine water	0,22 mg/l
PNEC Aquatic intermittent release	1,2 mg/l
PNEC Sewage treatment plant	43 mg/l
PNEC Soil	0,72 mg/kg

8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Safety glasses

Hand protection

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

splash contact:

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101746
Product name Sulfite Test Method: photometric 1.0 - 60.0 mg/l SO₃²⁻
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SO₃-1

Glove material: Nitrile rubber
Glove thickness: 0,11 mm
Break through time: > 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment
protective clothing

Respiratory protection

required when dusts are generated.

Recommended Filter type: Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

Environmental exposure controls

Do not let product enter drains.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	crystals deliquescent
Colour	white
Odour	odourless
Odour Threshold	Not applicable
pH	4 - 5 at 50 g/l 20 °C
Melting point	110 °C Elimination of water of crystallisation
Boiling point/boiling range	Not applicable, (decomposition)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101746
Product name Sulfite Test Method: photometric 1.0 - 60.0 mg/l SO₃²⁻
0.8 - 48.0 mg/l SO₂ Spectroquant®
SO₃-1

Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapour pressure	No information available.
Relative vapour density	No information available.
Density	No information available.
Relative density	No information available.
Water solubility	100 g/l at 20 °C
Partition coefficient: n-octanol/water	No information available.
Auto-ignition temperature	No information available.
Decomposition temperature	255 °C
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	none

9.2 Other data

Bulk density ca.700 kg/m³

SECTION 10. Stability and reactivity

10.1 Reactivity

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

10.2 Chemical stability

releases water of crystallisation when heated.

10.3 Possibility of hazardous reactions

Violent reactions possible with:

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101746
Product name Sulfite Test Method: photometric 1.0 - 60.0 mg/l SO₃²⁻
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SO₃-1

Strong oxidizing agents

10.4 Conditions to avoid

Strong heating.

10.5 Incompatible materials

Aluminium, Copper, Copper alloys, Nickel, Zinc

10.6 Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

LD50 Rat: 2.800 mg/kg
OECD Test Guideline 401(anhydrous substance)

Acute inhalation toxicity

Acute toxicity estimate: 1,6 mg/l; dust/mist
Expert judgement

Acute dermal toxicity

This information is not available.

Skin irritation

Rabbit
Result: No irritation
OECD Test Guideline 404
(anhydrous substance)

Eye irritation

Rabbit
Result: No eye irritation
(ECHA) (anhydrous substance)

Sensitisation

This information is not available.

Germ cell mutagenicity

Genotoxicity in vitro

Ames test

Salmonella typhimurium
Result: negative
(anhydrous substance) (Lit.)

Mouse lymphoma test

Result: negative
(ECHA) (anhydrous substance)

Carcinogenicity

This information is not available.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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SO₃-1

Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

Specific target organ toxicity - single exposure

This information is not available.

Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Repeated dose toxicity

Rat

male

Inhalation

aerosol

5 d

daily

LOAEL: 0,03 mg/l

OECD Test Guideline 412

Target Organs: Lungs, larynx

Rat

male and female

Inhalation

dust/mist

90 d

daily

NOAEL: 0,003 mg/l

OECD Test Guideline 413

Target Organs: larynx

Rat

male

Oral

13 Weeks

daily

NOAEL: >= 500 mg/kg

(ECHA)

Aspiration hazard

This information is not available.

11.2 Further information

After absorption:

disturbed electrolyte balance.

After uptake of large quantities:

Damage to:

Kidney

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101746
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SO₃-1

Other dangerous properties can not be excluded.
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

12.1 Toxicity

Toxicity to fish

LC50 *Poecilia reticulata* (guppy): ca. 320 mg/l; 96 h (anhydrous substance)
(IUCLID)

Toxicity to bacteria

EC50 activated sludge: 403 mg/l; 3 h
OECD Test Guideline 209

EC50 *Pseudomonas putida*: 56 mg/l; 8 h (anhydrous substance) (IUCLID)

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC)
No 1907/2006, Annex XIII.

12.6 Other adverse effects

Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

Waste treatment methods

See www.retrologistik.com for processes regarding the return of chemicals and
containers, or contact us there if you have further questions.

SECTION 14. Transport information

Land transport (ADR/RID)

14.1 - 14.6 Not classified as dangerous in the meaning of
transport regulations.

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

14.1 - 14.6 Not classified as dangerous in the meaning of
transport regulations.

Sea transport (IMDG)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101746
Product name Sulfite Test Method: photometric 1.0 - 60.0 mg/l SO₃²⁻
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SO₃-1

14.1 - 14.6 Not classified as dangerous in the meaning of transport regulations.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not relevant

THIS TRANSPORT DATA APPLIES TO THE ENTIRE PACK!

SECTION 15. Regulatory information

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

EU regulations

Major Accident Hazard 96/82/EC
Legislation Directive 96/82/EC does not apply

SEVESO III
Not applicable

Occupational restrictions Take note of Dir 94/33/EC on the protection of young people at work. Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Regulation (EC) No 1005/2009 on substances not regulated
that deplete the ozone layer

Regulation (EC) No 850/2004 of the not regulated
European Parliament and of the Council of 29
April 2004 on persistent organic pollutants
and amending Directive 79/117/EEC

Substances of very high concern (SVHC) This product does not contain
substances of very high concern
according to Regulation (EC) No
1907/2006 (REACH), Article 57
above the respective regulatory
concentration limit of $\geq 0.1\%$
(w/w).

National legislation

Storage class 10 - 13
The data applies to the entire pack.

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out according to regulation (EC) No. 1907/2006 (REACH) for this substance.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101746
Product name Sulfite Test Method: photometric 1.0 - 60.0 mg/l SO₃²⁻
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SO₃-1

SECTION 16. Other information

Full text of H-Statements referred to under sections 2 and 3.

H332 Harmful if inhaled.
H373 May cause damage to organs through prolonged or repeated exposure if inhaled.

Training advice

Provide adequate information, instruction and training for operators.

Labelling

Hazard pictograms



Signal word

Warning

Hazard statements

H332 Harmful if inhaled.

H373 May cause damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled.

Precautionary statements

Response

P314 Get medical advice/ attention if you feel unwell.

Contains: Disodium dihydrogen ethylenediaminetetraacetate dihydrate

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Regional representation

This information is given on the authorised Safety Data Sheet for your country.

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.

EXPOSURE SCENARIO 1 (Industrial use)

1. Industrial use (Chemical production)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101746
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SO₃-1

Sectors of end-use

- SU 3* Industrial uses: Uses of substances as such or in preparations at industrial sites
SU 9 Manufacture of fine chemicals
SU 10 Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)

Chemical product category

- PC19* Intermediate
PC21 Laboratory chemicals

Process categories

- PROC1* Use in closed process, no likelihood of exposure
PROC2 Use in closed, continuous process with occasional controlled exposure
PROC3 Use in closed batch process (synthesis or formulation)
PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)
PROC8a Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities
PROC8b Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities
PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC10 Roller application or brushing
PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation
PROC15 Use as laboratory reagent

Environmental Release Categories

- ERC1* Manufacture of substances
ERC2 Formulation of preparations
ERC4 Industrial use of processing aids in processes and products, not becoming part of articles
ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)
ERC6b Industrial use of reactive processing aids
-

2. Contributing scenarios: Operational conditions and risk management measures

2.1 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC15

Product characteristics

- Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) Solid, medium dustiness

Frequency and duration of use

- Frequency of use 8 hours/day
Remarks Long term

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101746
Product name Sulfite Test Method: photometric 1.0 - 60.0 mg/l SO₃²⁻
0.8 - 48.0 mg/l SO₂ Spectroquant®
SO₃-1

Frequency of use < 15 minutes/day
Remarks Short term
Frequency of use 5 days/week

Other operational conditions affecting workers exposure

Outdoor / Indoor Indoor without local exhaust ventilation (LEV)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice Wear suitable coveralls to prevent exposure to the skin.

2.2 Contributing scenario controlling worker exposure for: PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) Solid, medium dustiness

Frequency and duration of use

Frequency of use 8 hours/day
Remarks Long term
Frequency of use < 15 minutes/day
Remarks Short term
Frequency of use 5 days/week

Other operational conditions affecting workers exposure

Outdoor / Indoor Indoor with local exhaust ventilation (LEV)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice Wear suitable coveralls to prevent exposure to the skin.

2.3 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC14, PROC15

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 55 %.
Physical Form (at time of use) Solid substance, Aqueous solution

Frequency and duration of use

Frequency of use 8 hours/day
Frequency of use 5 days/week

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101746
 Product name Sulfite Test Method: photometric 1.0 - 60.0 mg/l SO₃²⁻
 0.8 - 48.0 mg/l SO₂ Spectroquant®
 SO₃-1

Other operational conditions affecting workers exposure

Outdoor / Indoor Indoor without local exhaust ventilation (LEV)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice Wear suitable coveralls to prevent exposure to the skin.

3. Exposure estimation and reference to its source

Environment

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard Assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

Workers

CS	Use descriptor	Exposure duration, route, effect	RCR	Exposure Assessment Method
2.1	PROC1	acute, inhalative, local	< 0,01	ECETOC TRA 3, Solid
		longterm, inhalative, local	< 0,01	ECETOC TRA 3, Solid
2.1	PROC2	acute, inhalative, local	0,17	ECETOC TRA 3, Solid
		longterm, inhalative, local	0,33	ECETOC TRA 3, Solid
2.1	PROC3	acute, inhalative, local	0,33	ECETOC TRA 3, Solid
		longterm, inhalative, local	0,67	ECETOC TRA 3, Solid
2.1	PROC15	acute, inhalative, local	0,17	ECETOC TRA 3, Solid
		longterm, inhalative, local	0,33	ECETOC TRA 3, Solid
2.2	PROC4	acute, inhalative, local	0,17	ECETOC TRA 3, Solid
		longterm, inhalative, local	0,33	ECETOC TRA 3, Solid
2.2	PROC5	acute, inhalative, local	0,17	ECETOC TRA 3, Solid
		longterm, inhalative, local	0,33	ECETOC TRA 3, Solid
2.2	PROC8a	acute, inhalative, local	0,17	ECETOC TRA 3, Solid
		longterm, inhalative, local	0,33	ECETOC TRA 3, Solid
2.2	PROC8b	acute, inhalative, local	0,17	ECETOC TRA 3, Solid
		longterm, inhalative, local	0,33	ECETOC TRA 3, Solid
2.2	PROC9	acute, inhalative, local	0,17	ECETOC TRA 3, Solid
		longterm, inhalative, local	0,33	ECETOC TRA 3, Solid
2.2	PROC14	acute, inhalative, local	0,03	ECETOC TRA 3, Solid
		longterm, inhalative, local	0,07	ECETOC TRA 3, Solid

SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Catalogue No. 101746
Product name Sulfite Test Method: photometric 1.0 - 60.0 mg/l SO₃²⁻
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SO₃-1

2.3	PROC1	longterm, inhalative, local	< 1	Qualitative assessment used to conclude safe use., Liquid
2.3	PROC2	longterm, inhalative, local	< 1	Qualitative assessment used to conclude safe use., Liquid
2.3	PROC3	longterm, inhalative, local	< 1	Qualitative assessment used to conclude safe use., Liquid
2.3	PROC5	longterm, inhalative, local	< 1	Qualitative assessment used to conclude safe use., Liquid
2.3	PROC8a	longterm, inhalative, local	< 1	Qualitative assessment used to conclude safe use., Liquid
2.3	PROC8b	longterm, inhalative, local	< 1	Qualitative assessment used to conclude safe use., Liquid
2.3	PROC9	longterm, inhalative, local	< 1	Qualitative assessment used to conclude safe use., Liquid
2.3	PROC10	longterm, inhalative, local	< 1	Qualitative assessment used to conclude safe use., Liquid
2.3	PROC14	longterm, inhalative, local	< 1	Qualitative assessment used to conclude safe use., Liquid
2.3	PROC15	longterm, inhalative, local	< 1	Qualitative assessment used to conclude safe use., Liquid

The default parameters and -efficiencies of the applied exposure assessment model were used for the calculation (unless stated differently).

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	101746
Product name	Sulfite Test Method: photometric 1.0 - 60.0 mg/l SO ₃ ²⁻ 0.8 - 48.0 mg/l SO ₂ Spectroquant® SO ₃ -1

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Chapter R.12: Use descriptor system; ECHA Guidance for downstream users; ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

For scaling of worker exposure assessments performed with ECETOC TRA, please consult the Merck tool ScIDeEx® at www.merckmillipore.com/scideex.

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SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 10.06.2020

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SECTION 1. Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Catalogue No.	101746
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	SO ₃ -2
REACH Registration Number	This product is a mixture. REACH Registration Number see section 3.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Reagent for analysis For additional information on uses please refer to the Merck Chemicals portal (www.merckgroup.com).
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1.3 Details of the supplier of the safety data sheet

Company	Merck KGaA * 64271 Darmstadt * Germany * Phone: +49 6151 72-0
Responsible Department	LS-QHC * e-mail: prodsafe@merckgroup.com

1.4 Emergency telephone number **Please contact the regional company representation in your country.****SECTION 2. Hazards identification****2.1 Classification of the substance or mixture**

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements**Labelling.(REGULATION (EC) No 1272/2008)**

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

Safety data sheet available on request.

2.3 Other hazards

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101746
Product name Sulfite Test Method: photometric 1.0 - 60.0 mg/l SO₃²⁻
0.8 - 48.0 mg/l SO₂ Spectroquant®
SO₃-2

None known.

SECTION 3. Composition/information on ingredients

Chemical nature Aqueous solution of inorganic and organic compounds.

3.1 Substance

Not applicable

3.2 Mixture

Hazardous components (REGULATION (EC) No 1272/2008)

Chemical name (Concentration)

CAS-No.	Registration number	Classification
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ethanol (>= 3 % - < 10 %)

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

64-17-5	01-2119457610-	
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	43-XXXX	
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		Flammable liquid, Category 2, H225
		Eye irritation, Category 2, H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4. First aid measures

4.1 Description of first aid measures

After inhalation: fresh air.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

After eye contact: rinse out with plenty of water. Remove contact lenses.

After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

4.2 Most important symptoms and effects, both acute and delayed

We have no description of any symptoms of toxicity.

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101746
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SO₃-2

5.2 Special hazards arising from the substance or mixture

Not combustible.
Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters

Special protective equipment for firefighters
In the event of fire, wear self-contained breathing apparatus.

Further information

Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

6.2 Environmental precautions

Do not empty into drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly.
Clean up affected area.

6.4 Reference to other sections

Indications about waste treatment see section 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling
Observe label precautions.

Hygiene measures

Change contaminated clothing. Wash hands after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions
Tightly closed.

Recommended storage temperature see product label.

The data applies to the entire pack.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101746
Product name Sulfite Test Method: photometric 1.0 - 60.0 mg/l SO₃²⁻
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SO₃-2

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

ethanol (64-17-5)

Worker DNEL, acute	Local effects	inhalation	1900 mg/m ³
Worker DNEL, longterm	Systemic effects	dermal	343 mg/kg Body weight
Worker DNEL, longterm	Systemic effects	inhalation	950 mg/m ³
Consumer DNEL, acute	Local effects	inhalation	950 mg/m ³
Consumer DNEL, longterm	Systemic effects	dermal	206 mg/kg Body weight
Consumer DNEL, longterm	Systemic effects	inhalation	114 mg/m ³
Consumer DNEL, longterm	Systemic effects	oral	87 mg/kg Body weight

8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Safety glasses

Hand protection

full contact:

Glove material: Nitrile rubber
Glove thickness: 0,11 mm
Break through time: > 480 min

splash contact:

Glove material: Nitrile rubber
Glove thickness: 0,11 mm
Break through time: > 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatrill® L (full contact), KCL 741 Dermatrill® L (splash contact).

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101746
Product name Sulfite Test Method: photometric 1.0 - 60.0 mg/l SO₃²⁻
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SO₃-2

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Respiratory protection

Not required; except in case of aerosol formation.

Environmental exposure controls

Do not empty into drains.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Colour	light yellow
Odour	ethanolic
Odour Threshold	No information available.
pH	7,0 at 25 °C
Melting point	No information available.
Boiling point	No information available.
Flash point	Not applicable
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapour pressure	No information available.
Relative vapour density	No information available.
Density	No information available.
Relative density	No information available.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101746
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SO₃-2

Water solubility	No information available.
Partition coefficient: n-octanol/water	No information available.
Auto-ignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	none

9.2 Other data

none

SECTION 10. Stability and reactivity

10.1 Reactivity

See section 10.3

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Violent reactions possible with:

The generally known reaction partners of water.

10.4 Conditions to avoid

no information available

10.5 Incompatible materials

no information available

10.6 Hazardous decomposition products

no information available

SECTION 11. Toxicological information

11.1 Information on toxicological effects

Mixture

Acute oral toxicity

This information is not available.

Acute inhalation toxicity

This information is not available.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101746
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SO₃-2

Acute dermal toxicity

This information is not available.

Skin irritation

This information is not available.

Eye irritation

This information is not available.

Sensitisation

This information is not available.

Germ cell mutagenicity

This information is not available.

Carcinogenicity

This information is not available.

Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

Specific target organ toxicity - single exposure

This information is not available.

Specific target organ toxicity - repeated exposure

This information is not available.

Aspiration hazard

This information is not available.

11.2 Further information

Hazardous properties cannot be excluded, but are relatively improbable due to the low concentration of the dissolved substance(s).

Handle in accordance with good industrial hygiene and safety practice.

Components

ethanol

Acute oral toxicity

LD50 Rat: 10.470 mg/kg
OECD Test Guideline 401

Acute inhalation toxicity

LC50 Rat: 124,7 mg/l; 4 h ; vapour
OECD Test Guideline 403

Skin irritation

Rabbit
Result: No skin irritation
OECD Test Guideline 404

Eye irritation

Rabbit
Result: Eye irritation
OECD Test Guideline 405

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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SO₃-2

Sensitisation

Local lymph node assay (LLNA) Mouse
Result: negative
Method: OECD Test Guideline 429

Germ cell mutagenicity

Genotoxicity in vitro
Ames test
Salmonella typhimurium
Result: negative
Method: OECD Test Guideline 471

In vitro mammalian cell gene mutation test
Mouse lymphoma test
Result: negative
Method: OECD Test Guideline 476

Reproductive toxicity

Application Route: Oral
Mouse
Method: OECD Test Guideline 416

SECTION 12. Ecological information

Mixture

12.1 Toxicity

No information available.

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

Discharge into the environment must be avoided.

Components

ethanol

Toxicity to fish

flow-through test EC50 Pimephales promelas (fathead minnow): 15.300 mg/l; 96 h
Analytical monitoring: yes
US-EPA

Toxicity to daphnia and other aquatic invertebrates

EC50 Daphnia magna (Water flea): 9.268 - 14.221 mg/l; 48 h (IUCLID)

Toxicity to algae

IC5 Scenedesmus quadricauda (Green algae): 5.000 mg/l; 7 d (Lit.)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101746
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SO₃²⁻

Toxicity to bacteria

EC5 Pseudomonas putida: 6.500 mg/l; 16 h (IUCLID)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

semi-static test NOEC Daphnia magna (Water flea): 9,6 mg/l; 9 d
(ECHA)

Biodegradability

94 %

OECD Test Guideline 301E

Readily biodegradable

Biochemical Oxygen Demand (BOD)

930 - 1.670 mg/g (5 d)

(Lit.)

Theoretical oxygen demand (ThOD)

2.100 mg/g

(Lit.)

Ratio COD/ThBOD

90 %

(Lit.)

Partition coefficient: n-octanol/water

log Pow: -0,31

(experimental)

(Lit.) Bioaccumulation is not expected.

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

SECTION 13. Disposal considerations

Waste treatment methods

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14. Transport information

Land transport (ADR/RID)

14.1 - 14.6

Not classified as dangerous in the meaning of transport regulations.

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

14.1 - 14.6

Not classified as dangerous in the meaning of transport regulations.

Sea transport (IMDG)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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SO₃-2

14.1 - 14.6 Not classified as dangerous in the meaning of transport regulations.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not relevant

THIS TRANSPORT DATA APPLIES TO THE ENTIRE PACK!

SECTION 15. Regulatory information

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

EU regulations

Major Accident Hazard 96/82/EC
Legislation Directive 96/82/EC does not apply
SEVESO III
Not applicable

Regulation (EC) No 1005/2009 on substances not regulated
that deplete the ozone layer

Regulation (EC) No 850/2004 of the not regulated
European Parliament and of the Council of 29
April 2004 on persistent organic pollutants
and amending Directive 79/117/EEC

Substances of very high concern (SVHC) This product does not contain
substances of very high concern
according to Regulation (EC) No
1907/2006 (REACH), Article 57
above the respective regulatory
concentration limit of $\geq 0.1\%$
(w/w).

National legislation

Storage class 10 - 13
The data applies to the entire pack.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16. Other information

Full text of H-Statements referred to under sections 2 and 3.

Full text of R-phrases referred to under sections 2 and 3

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	101746
Product name	Sulfite Test Method: photometric 1.0 - 60.0 mg/l SO ₃ ²⁻ 0.8 - 48.0 mg/l SO ₂ Spectroquant® SO ₃ -2

Training advice

Provide adequate information, instruction and training for operators.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Regional representation

This information is given on the authorised Safety Data Sheet for your country.

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.

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