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

Revision Date 23.02.2012 Version 9.10

SECTION 1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Catalogue No.	106505
Product name	Sodium dithionite EMPLURA®
REACH Registration Number	A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Identified uses	Materials for use in technical applications For additional information on uses please refer to the Merck Chemicals portal (www.merck-chemicals.com).

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)

Self-heating substances, Category 1, H251
Acute toxicity, Category 4, Oral, H302

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

Classification (67/548/EEC or 1999/45/EC)

O	Oxidising	R7
Xn	Harmful	R22
		R31

For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms

Signal word
Danger

Hazard statements
H251 Self-heating: may catch fire.
H302 Harmful if swallowed.
EUH031 Contact with acids liberates toxic gas.
EUH208 May produce an allergic reaction.

Precautionary statements
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P370 + P378 In case of fire: Use powder for extinction.

Reduced labelling (≤125 ml)

Hazard pictograms

Signal word
Danger

Hazard statements
H251 Self-heating: may catch fire.
EUH208 May produce an allergic reaction.

Precautionary statements
P370 + P378 In case of fire: Use powder for extinction.

Contains: sodium dithionite, Hexamethylenetetramine

Index-No.	016-028-00-1	

Labelling (67/548/EEC or 1999/45/EC)

Symbol(s)	O	Oxidising
	Xn	Harmful
R-phrase(s)	7-22-31	May cause fire. Harmful if swallowed. Contact with acids liberates toxic gas.
S-phrase(s)	7/8-26-28-43	Keep container tightly closed and dry. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water. In case of fire, use powder extinguisher. Never use water.

Further information
Contains methenamine. May produce an allergic reaction.

EC-No.	231-890-0	EC Label

Reduced labelling (≤125 ml)

Symbol(s)	O	Oxidising
	Xn	Harmful
R-phrase(s)	22	Harmful if swallowed.

Contains: sodium dithionite, Hexamethylenetetramine

2.3 Other hazards
None known.

SECTION 3. Composition/information on ingredients

Formula	$Na_2S_2O_4$	$Na_2O_4S_2$ (Hill)
CAS-No.	7775-14-6	
Index-No.	016-028-00-1	
EC-No.	231-890-0	
Molar mass	174,11 g/mol	

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

CAS-No.	EC-No. / Registration number	Index-No.	Classification
sodium dithionite (>= 50 % - <= 100 %)			
7775-14-6	231-890-0 / *)	016-028-00-1	Self-heating substances and mixtures, Category 1, H251 Acute toxicity, Category 4, H302
sodium carbonate (>= 3 % - < 10 %)			
497-19-8	207-838-8 / *)	011-005-00-2	Eye irritation, Category 2, H319
Hexamethylenetetramine (>= 0,1 % - < 1 %)			
100-97-0	202-905-8 / *)	612-101-00-2	Flammable solid, Category 2, H228 Skin sensitization, Category 1, H317

*) A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Hazardous components (1999/45/EC)

CAS-No.	EC-No.	Index-No.	Classification
sodium dithionite (>= 50 % - <= 100 %)			
7775-14-6	231-890-0	016-028-00-1	R7 R31 Xn, Harmful; R22
sodium carbonate (>= 1 % - < 10 %)			
497-19-8	207-838-8	011-005-00-2	Xi, Irritant; R36
Hexamethylenetetramine (>= 0,1 % - < 1 %)			
100-97-0	202-905-8	612-101-00-2	F, Highly flammable; R11 R43

For the full text of the R-phrases mentioned in this Section, see Section 16.

SECTION 4. First aid measures

4.1 Description of first aid measures

After inhalation: fresh air. Consult doctor if feeling unwell.

After skin contact: wash off with plenty of water. Remove contaminated clothing.

After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist if necessary.

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
irritant effects, Cough, respiratory paralysis, Shortness of breath, pain, Diarrhoea, Nausea, Vomiting, collapse, muscular weakness, death

4.3 Indication of any immediate medical attention and special treatment needed
Laxative: Sodium sulfate (1 tablespoon/1/4 l water).

SECTION 5. Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media
Sand, Carbon dioxide (CO_2), Dry powder

Unsuitable extinguishing media
Water, Foam

5.2 Special hazards arising from the substance or mixture
Combustible material
danger of spontaneous combustion!
Risk of dust explosion.
Development of hazardous combustion gases or vapours possible in the event of fire.
Fire may cause evolution of:
Sulphur oxides

5.3 Advice for firefighters
Special protective equipment for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information
Cool closed containers exposed to fire with water spray. 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 substance contact. Avoid inhalation of dusts. 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 empty into drains. Risk of explosion.

6.3 Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7.2 and 10.5).
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

Observe label precautions.

Caution! Temperatures > 50°C cause evolution of gas in closed containers. Overpressure produces a risk of bursting.

7.2 Conditions for safe storage, including any incompatibilities

Tightly closed. Dry. Keep away from heat and sources of ignition.

Store at +5°C to +30°C.

7.3 Specific end uses

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

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

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.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

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 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 ABEK
The entrepeneur 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 empty into drains.
Risk of explosion.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	powder
Colour	white
Odour	stinging
Odour Threshold	No information available.
pH	ca. 7 - 9 at 50 g/l 20 °C
Melting point	ca. 100 °C (decomposition)
Boiling point/boiling range	not applicable
Flash point	> 100 °C Method: DIN 51758
Evaporation rate	No information available.
Flammability (solid, gas)	The substance or mixture is a flammable solid with the category 1.
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Vapour pressure	not applicable
Relative vapour density	No information available.

Relative density	2,5 g/cm³ at 20 °C
Water solubility	ca.250 g/l at 20 °C (slow decomposition)
Partition coefficient: n-octanol/water	log Pow: < -4,7 (calculated) (External MSDS) Bioaccumulation is not expected.
Autoignition temperature	Self-heating: may catch fire.
Decomposition temperature	> 80 °C
Viscosity, dynamic	No information available.
Explosive properties	Not classified als explosive.
Oxidizing properties	No information available.

9.2 Other data

Ignition temperature	> 200 °C Method: DIN 51794
Bulk density	ca.1.250 kg/m³

SECTION 10. Stability and reactivity

10.1 Reactivity

danger of spontaneous combustion!
Self-ignition possible due to air moisture.
Risk of dust explosion.

10.2 Chemical stability

In case of decomposition in closed containers and tubes risk of bursting due to buildup of overpressure.

10.3 Possibility of hazardous reactions

A risk of explosion and/or of toxic gas formation exists with the following substances:

acids

Violent reactions possible with:

Oxidizing agents, Water, salts of oxyhalogenic acids

10.4 Conditions to avoid

Exposure to moisture.
Heating (decomposition).
Caution! Temperatures > 50°C cause evolution of gas in closed containers. Overpressure produces a risk of bursting.

10.5 Incompatible materials

no information available

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: 2.500 mg/kg (External MSDS) (Regulation (EC) No 1272/2008, Annex VI)

absorption

Acute inhalation toxicity

Symptoms: Irritation symptoms in the respiratory tract., Cough, Shortness of breath

Skin irritation
rabbit
Result: No irritation
(External MSDS)

Eye irritation
Possible damages: slight irritation

Sensitisation
May produce an allergic reaction.

Genotoxicity in vitro
Ames test
Result: negative
(External MSDS)

Specific target organ toxicity - single exposure
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ toxicity - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard
Based on available data the classification criteria are not met.

11.2 Further information
After swallowing of large amounts:
Nausea, Vomiting
Systemic effects:
pain, Diarrhoea, muscular weakness, collapse, respiratory paralysis, death
Further data:
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

12.1 Toxicity
Toxicity to fish
LC50 Leuciscus idus (Golden orfe): 46 - 68 mg/l; 96 h
DIN 38412 (External MSDS) (Regulation (EC) No 1272/2008, Annex VI)

Toxicity to daphnia and other aquatic invertebrates
EC50 Daphnia magna (Water flea): 98 mg/l; 48 h (External MSDS) (Regulation (EC) No 1272/2008, Annex VI)

Toxicity to algae
IC50 Desmodesmus subspicatus (green algae): 206 mg/l; 72 h (External MSDS) (Regulation (EC) No 1272/2008, Annex VI)

Toxicity to bacteria
EC50 Pseudomonas putida: 107 mg/l; 17 h
DIN 38412 (External MSDS) (Regulation (EC) No 1272/2008, Annex VI)

12.2 Persistence and degradability
Biodegradability

The methods for determining the biological degradability are not applicable to inorganic substances.

Chemical Oxygen Demand (COD)
210 mg/g
(External MSDS)

12.3 Bioaccumulative potential
Partition coefficient: n-octanol/water
log Pow: < -4,7
(calculated)
(External MSDS) Bioaccumulation is not expected.

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
Additional ecological information
Biological effects:
Reacts with water to form toxic decomposition products.
Further information on ecology
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

ADR/RID
UN 1384 SODIUM DITHIONITE, 4.2, II
Environmentally hazardous no

IATA
UN 1384 SODIUM DITHIONITE, 4.2, II
Environmentally hazardous no

IMDG
UN 1384 SODIUM DITHIONITE, 4.2, II
EmS F-A S-J
Marine pollutant no

The transport regulations ADR/RID, IATA - DGR, IMDG -Code are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.

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	Oxidising 3 Quantity 1: 50 t Quantity 2: 200 t
Occupational restrictions	Take note of Dir 94/33/EC on the protection of young people at work. Take note of Dir 92/85/EEC on the safety and health at work of pregnant workers.

National legislation

Storage class	4.2

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.

H228	Flammable solid.
H251	Self-heating: may catch fire.
H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.

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

R 7	May cause fire.
R11	Highly flammable.
R22	Harmful if swallowed.
R31	Contact with acids liberates toxic gas.
R36	Irritating to eyes.
R43	May cause sensitization by skin contact.

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.