

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 15.05.2018

Version 17.0

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

1.1 Product identifier

Catalogue No.	112533
Product name	Dodecyl sulfate sodium salt for biochemistry and surfactant tests
REACH Registration Number	01-2119489461-32-XXXX
CAS-No.	151-21-3

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

Identified uses	Biochemical research/analysis In compliance with the conditions described in the annex to this safety data sheet.
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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.
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SECTION 2. Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

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Product name Dodecyl sulfate sodium salt for biochemistry and surfactant tests

Flammable solid, Category 2, H228

Acute toxicity, Category 4, Oral, H302

Skin irritation, Category 2, H315

Serious eye damage, Category 1, H318

Specific target organ toxicity - single exposure, Category 3, Respiratory system, H335

Chronic aquatic toxicity, Category 3, H412

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

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms



Signal word

Danger

Hazard statements

H228 Flammable solid.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention

P210 Keep away from heat.

P273 Avoid release to the environment.

P280 Wear eye protection.

Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

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Product name Dodecyl sulfate sodium salt for biochemistry and surfactant tests

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P313 Get medical advice/ attention.

Reduced labelling (≤125 ml)

Hazard pictograms



Signal word

Danger

Hazard statements

H318 Causes serious eye damage.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P280 Wear eye protection.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P313 Get medical advice/ attention.

CAS-No. 151-21-3

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

3.1 Substance

Formula	$C_{12}H_{25}OSO_2ONa$	$C_{12}H_{25}NaO_4S$ (Hill)
EC-No.	205-788-1	
Molar mass	288,37 g/mol	

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

Chemical name (Concentration)

CAS-No. Registration number Classification

dodecyl sulphate sodium salt (<= 100 %)

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

151-21-3 01-2119489461-32-

XXXX

Flammable solid, Category 2, H228

Acute toxicity, Category 4, H302

Skin irritation, Category 2, H315

Serious eye damage, Category 1, H318

Specific target organ toxicity - single exposure, Category 3, H335

Chronic aquatic toxicity, Category 3, H412

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.

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. Immediately call in ophthalmologist. 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

Irritation and corrosion, Cough, Shortness of breath, Tiredness

Risk of serious damage to eyes.

4.3 Indication of any immediate medical attention and special treatment needed

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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:

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

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 substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. 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. Risk of explosion.

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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 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.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures

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

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

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

Recommended storage temperature see product label.

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

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Product name Dodecyl sulfate sodium salt for biochemistry and surfactant tests

Derived No Effect Level (DNEL)

Worker DNEL, longterm	Systemic effects	dermal	4060 mg/kg Body weight
Worker DNEL, longterm	Systemic effects	inhalation	285 mg/m ³
Consumer DNEL, longterm	Systemic effects	dermal	2440 mg/kg Body weight
Consumer DNEL, longterm	Systemic effects	inhalation	85 mg/m ³
Consumer DNEL, longterm	Systemic effects	oral	24 mg/kg Body weight

Predicted No Effect Concentration (PNEC)

PNEC Fresh water	0,137 mg/l
PNEC Marine water	0,0137 mg/l
PNEC Aquatic intermittent release	0,055 mg/l
PNEC Sewage treatment plant	1084 mg/l
PNEC Fresh water sediment	4,82 mg/kg
PNEC Marine sediment	0,482 mg/kg
PNEC Soil	0,882 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.

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Product name Dodecyl sulfate sodium salt for biochemistry and surfactant tests

Eye/face protection

Tightly fitting safety goggles

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 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.

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Product name Dodecyl sulfate sodium salt for biochemistry and surfactant tests

Environmental exposure controls

Do not let product enter drains.

Risk of explosion.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	powder
Colour	white
Odour	odourless
Odour Threshold	Not applicable
pH	6 - 9 at 10 g/l 20 °C
Melting point	204 - 207 °C
Boiling point/boiling range	Not applicable
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	The substance or mixture is a flammable solid with the category 2. Flammability (solids)
Lower explosion limit	No information available.
Upper explosion limit	No information available.

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Product name	Dodecyl sulfate sodium salt for biochemistry and surfactant tests

Vapour pressure	No information available.
Relative vapour density	No information available.
Density	1,1 g/cm ³ at 20 °C
Relative density	No information available.
Water solubility	> 130 g/l at 20 °C Method: OECD Test Guideline 105
Partition coefficient: n-octanol/water	log Pow: ≤ -2,03 (20 °C) OECD Test Guideline 107
Auto-ignition temperature	No information available.
Decomposition temperature	380 °C
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	none

9.2 Other data

Bulk density	≥ 400 kg/m ³
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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.

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Product name Dodecyl sulfate sodium salt for biochemistry and surfactant tests

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:

strong oxidising agents

10.4 Conditions to avoid

no information available

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: 977 mg/kg

OECD Test Guideline 401

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Acute inhalation toxicity

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:., damage of respiratory tract

Acute dermal toxicity

LD50 Rabbit: > 2.000 mg/kg

OECD Test Guideline 402

Skin irritation

Rabbit

Result: Irritations

OECD Test Guideline 404

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Product name Dodecyl sulfate sodium salt for biochemistry and surfactant tests

Causes skin irritation.

Eye irritation

Rabbit

Result: Irreversible effects on the eye

OECD Test Guideline 405

|| Causes serious eye damage.

Sensitisation

Maximisation Test

Result: negative

(IUCLID)

Germ cell mutagenicity

Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

Mutagenicity (mammal cell test):

Mouse lymphoma test

Result: negative

Method: OECD Test Guideline 476

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

May cause respiratory irritation.

Target Organs: Respiratory system

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Product name Dodecyl sulfate sodium salt for biochemistry and surfactant tests

Specific target organ toxicity - repeated exposure

This information is not available.

Aspiration hazard

This information is not available.

11.2 Further information

After absorption of toxic quantities:

Tiredness, vasodilation

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

flow-through test LC50 Pimephales promelas (fathead minnow): 29 mg/l; 96 h

OECD Test Guideline 203

flow-through test NOEC Pimephales promelas (fathead minnow): > 1,357 mg/l; 42 d

(ECHA)

Toxicity to daphnia and other aquatic invertebrates

EC0 E.sulcatum: 40 mg/l; 72 h

(Lit.)

EC50 Daphnia magna (Water flea): 6 mg/l; 48 h

(IUCLID)

Toxicity to algae

static test EC50 Desmodesmus subspicatus (green algae): 53 mg/l; 72 h

DIN 38412

Toxicity to bacteria

microtox test EC50 Photobacterium phosphoreum: 0,46 mg/l; 30 min

(IUCLID)

EC50 activated sludge: 130 mg/l; 3 h

OECD Test Guideline 209

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Product name Dodecyl sulfate sodium salt for biochemistry and surfactant tests

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

flow-through test NOEC Ceriodaphnia dubia (water flea): 0,88 mg/l; 7 d

US-EPA

12.2 Persistence and degradability

Biodegradability

95 %; 28 d; aerobic

OECD Test Guideline 301B

Readily biodegradable

Ratio BOD/ThBOD

BOD5 99 %

(Lit.)

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: $\leq -2,03$ (20 °C)

OECD Test Guideline 107

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.

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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 UN number	UN 1325
14.2 Proper shipping name	FLAMMABLE SOLID, ORGANIC, N.O.S. (SODIUM DODECYL SULFATE)
14.3 Class	4.1
14.4 Packing group	III
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
Tunnel restriction code	E

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

14.1 UN number	UN 1325
14.2 Proper shipping name	FLAMMABLE SOLID, ORGANIC, N.O.S. (SODIUM DODECYL SULFATE)
14.3 Class	4.1
14.4 Packing group	III
14.5 Environmentally hazardous	--
14.6 Special precautions for user	no

Sea transport (IMDG)

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Product name	Dodecyl sulfate sodium salt for biochemistry and surfactant tests

14.1 UN number	UN 1325
14.2 Proper shipping name	FLAMMABLE SOLID, ORGANIC, N.O.S. (SODIUM DODECYL SULFATE)
14.3 Class	4.1
14.4 Packing group	III
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
EmS	F-A S-G
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not relevant

SECTION 15. Regulatory information

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

EU regulations

Major Accident Hazard	SEVESO III
Legislation	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.
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Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	not regulated
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Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC	not regulated
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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 4.1B

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.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H412	Harmful to aquatic life with long lasting effects.

Training advice

Provide adequate information, instruction and training for operators.

Labelling

Hazard pictograms



Signal word

Danger

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Hazard statements

H228 Flammable solid.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention

P210 Keep away from heat.

P273 Avoid release to the environment.

P280 Wear eye protection.

Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P313 Get medical advice/ attention.

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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Product name Dodecyl sulfate sodium salt for biochemistry and surfactant tests

EXPOSURE SCENARIO 1 (Industrial use)

1. Industrial use Biochemical research/analysis)

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

- 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

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Product name Dodecyl sulfate sodium salt for biochemistry and surfactant tests

2. Contributing scenarios: Operational conditions and risk management measures

2.1 Contributing scenario controlling environmental exposure for: ERC2, SpERC AISE 1

Amount used

Annual amount	29950 t
Remarks	European Union

Daily amount per site (Msafe)	290.240 kg
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Environment factors not influenced by risk management

Flow rate	18.000 m3/d
Dilution Factor (River)	10
Dilution Factor (Coastal Areas)	100

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent	2.000 m3/d

2.2 Contributing scenario controlling environmental exposure for: ERC4, SpERC AISE 13

Amount used

Annual amount	6000 t
Remarks	European Union

Daily amount per site (Msafe)	134,63 kg
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Environment factors not influenced by risk management

Flow rate	18.000 m3/d
Dilution Factor (River)	10
Dilution Factor (Coastal Areas)	100

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Municipal sewage treatment plant
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Flow rate of sewage treatment plant effluent	2.000 m3/d
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2.3 Contributing scenario controlling environmental exposure for: ERC6a

Amount used

Annual amount	130 t
Remarks	European Union

Daily amount per site (Msafe)	7.296 kg
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Environment factors not influenced by risk management

Flow rate	18.000 m3/d
Dilution Factor (River)	10
Dilution Factor (Coastal Areas)	100

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent	2.000 m3/d

2.4 Contributing scenario controlling environmental exposure for: ERC6b

Amount used

Annual amount	550 t
Remarks	European Union

Daily amount per site (Msafe)	2.926 kg
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Environment factors not influenced by risk management

Flow rate	18.000 m3/d
Dilution Factor (River)	10
Dilution Factor (Coastal Areas)	100

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Catalogue No.	112533
Product name	Dodecyl sulfate sodium salt for biochemistry and surfactant tests

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent	2.000 m3/d

2.5 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, 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 100 %.
Physical Form (at time of use)	Solid, high dustiness

Frequency and duration of use

Frequency of use	8 hours/day
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Other operational conditions affecting workers exposure

Outdoor / Indoor	Indoor without local exhaust ventilation (LEV)
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Organisational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice	Wear suitable gloves (tested to EN374) and eye protection.
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2.6 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, 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 100 %.
Physical Form (at time of use)	Aqueous solution

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Catalogue No. 112533

Product name Dodecyl sulfate sodium salt for biochemistry and surfactant tests

Frequency and duration of use

Frequency of use 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor Indoor without local exhaust ventilation (LEV)

Organisational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice Wear suitable gloves (tested to EN374) and eye protection.

3. Exposure estimation and reference to its source

Environment

CS	Use descriptor	Msafe	Compartment	RCR	Exposure Assessment Method
2.1	ERC2	290240 kg/day	Marine water	0,06	ECETOC TRA 2
2.2	ERC4	134,63 kg/day	Marine water	0,37	ECETOC TRA 2
2.3	ERC6a	7296 kg/day	Marine water	0,89	ECETOC TRA 2
2.4	ERC6b	2926 kg/day	Marine water	0,94	ECETOC TRA 2

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Product name Dodecyl sulfate sodium salt for biochemistry and surfactant tests

Workers

CS	Use descriptor	Exposure duration, route, effect	RCR	Exposure Assessment Method
2.5	PROC1	longterm, inhalative, systemic	< 0,01	ECETOC TRA 2, Solid
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Solid
		longterm, combined, systemic	< 0,01	
2.5	PROC2	longterm, inhalative, systemic	< 0,01	ECETOC TRA 2, Solid
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Solid
		longterm, combined, systemic	< 0,01	
2.5	PROC3	longterm, inhalative, systemic	< 0,01	ECETOC TRA 2, Solid
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Solid
		longterm, combined, systemic	< 0,01	
2.5	PROC4	longterm, inhalative, systemic	0,06	ECETOC TRA 2, Solid
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Solid
		longterm, combined, systemic	0,06	
2.5	PROC5	longterm, inhalative, systemic	0,06	ECETOC TRA 2, Solid
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Solid
		longterm, combined, systemic	0,06	
2.5	PROC8a	longterm, inhalative, systemic	0,12	ECETOC TRA 2, Solid
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Solid
		longterm, combined, systemic	0,12	
2.5	PROC8b	longterm, inhalative, systemic	0,06	ECETOC TRA 2, Solid
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Solid
		longterm, combined, systemic	0,06	
2.5	PROC9	longterm, inhalative, systemic	0,05	ECETOC TRA 2, Solid
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Solid
		longterm, combined, systemic	0,05	
2.5	PROC10	longterm, inhalative, systemic	0,02	ECETOC TRA 2, Solid
		longterm, dermal, systemic	0,01	ECETOC TRA 2, Solid
		longterm, combined, systemic	0,03	
2.5	PROC14	longterm, inhalative, systemic	0,02	ECETOC TRA 2, Solid
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Solid
		longterm, combined, systemic	0,02	
2.5	PROC15	longterm, inhalative, systemic	0,01	ECETOC TRA 2, Solid
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Solid
		longterm, combined, systemic	0,01	

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2.6	PROC1	longterm, inhalative, systemic	< 0,01	ECETOC TRA 2, Aqueous solution
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Aqueous solution
		longterm, combined, systemic	< 0,01	
2.6	PROC2	longterm, inhalative, systemic	0,04	ECETOC TRA 2, Aqueous solution
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Aqueous solution
		longterm, combined, systemic	0,04	
2.6	PROC3	longterm, inhalative, systemic	0,13	ECETOC TRA 2, Aqueous solution
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Aqueous solution
		longterm, combined, systemic	0,13	
2.6	PROC4	longterm, inhalative, systemic	0,21	ECETOC TRA 2, Aqueous solution
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Aqueous solution
		longterm, combined, systemic	0,21	
2.6	PROC5	longterm, inhalative, systemic	0,21	ECETOC TRA 2, Aqueous solution
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Aqueous solution
		longterm, combined, systemic	0,21	
2.6	PROC8a	longterm, inhalative, systemic	0,42	ECETOC TRA 2, Aqueous solution
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Aqueous solution
		longterm, combined, systemic	0,42	
2.6	PROC8b	longterm, inhalative, systemic	0,21	ECETOC TRA 2, Aqueous solution
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Aqueous solution
		longterm, combined, systemic	0,21	
2.6	PROC9	longterm, inhalative, systemic	0,21	ECETOC TRA 2, Aqueous solution
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Aqueous solution
		longterm, combined, systemic	0,21	
2.6	PROC10	longterm, inhalative, systemic	0,42	ECETOC TRA 2, Aqueous solution
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Aqueous solution
		longterm, combined, systemic	0,42	
2.6	PROC14	longterm, inhalative, systemic	0,21	ECETOC TRA 2, Aqueous solution
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Aqueous solution
		longterm, combined, systemic	0,21	
2.6	PROC15	longterm, inhalative, systemic	0,21	ECETOC TRA 2, Aqueous solution
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Aqueous solution
		longterm, combined, systemic	0,21	

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

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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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EXPOSURE SCENARIO 2 (Professional use)

1. Professional use Biochemical research/analysis)

Sectors of end-use

SU 22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Chemical product category

PC21 Laboratory chemicals

Process categories

PROC15 Use as laboratory reagent

Environmental Release Categories

ERC2 Formulation of preparations

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 environmental exposure for: ERC2, SpERC AISE 1

Amount used

Annual amount	29950 t
Remarks	European Union

Daily amount per site (Msafe)	290.240 kg
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Environment factors not influenced by risk management

Flow rate	18.000 m3/d
Dilution Factor (River)	10
Dilution Factor (Coastal Areas)	100

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent	2.000 m3/d

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2.2 Contributing scenario controlling environmental exposure for: ERC6a

Amount used

Annual amount	130 t
Remarks	European Union
Daily amount per site (Msafe)	7.296 kg

Environment factors not influenced by risk management

Flow rate	18.000 m3/d
Dilution Factor (River)	10
Dilution Factor (Coastal Areas)	100

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent	2.000 m3/d

2.3 Contributing scenario controlling environmental exposure for: ERC6b

Amount used

Annual amount	550 t
Remarks	European Union
Daily amount per site (Msafe)	2.926 kg

Environment factors not influenced by risk management

Flow rate	18.000 m3/d
Dilution Factor (River)	10
Dilution Factor (Coastal Areas)	100

Conditions and measures related to municipal sewage treatment plant

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Product name	Dodecyl sulfate sodium salt for biochemistry and surfactant tests

Type of Sewage Treatment Plant	Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent	2.000 m3/d

2.4 Contributing scenario controlling worker exposure for: PROC15

Product characteristics

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

Frequency and duration of use

Frequency of use	8 hours/day
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Other operational conditions affecting workers exposure

Outdoor / Indoor	Indoor without local exhaust ventilation (LEV)
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Organisational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice	Wear suitable gloves (tested to EN374) and eye protection.
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2.5 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, 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 100 %.
Physical Form (at time of use)	Aqueous solution

Frequency and duration of use

Frequency of use	8 hours/day
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Catalogue No. 112533

Product name Dodecyl sulfate sodium salt for biochemistry and surfactant tests

Other operational conditions affecting workers exposure

Outdoor / Indoor Indoor without local exhaust ventilation (LEV)

Organisational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice Wear suitable gloves (tested to EN374) and eye protection.

3. Exposure estimation and reference to its source

Environment

CS	Use descriptor	Msafe	Compartment	RCR	Exposure Assessment Method
2.1	ERC2	290240 kg/day	Marine water	0,06	ECETOC TRA 2
2.2	ERC6a	7296 kg/day	Marine water	0,89	ECETOC TRA 2
2.3	ERC6b	2926 kg/day	Marine water	0,94	ECETOC TRA 2

Workers

CS	Use descriptor	Exposure duration, route, effect	RCR	Exposure Assessment Method
2.4	PROC15	longterm, inhalative, systemic	0,01	ECETOC TRA 2, Solid
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Solid
		longterm, combined, systemic	0,01	
2.5	PROC15	longterm, inhalative, systemic	0,21	ECETOC TRA 2, Aqueous solution
		longterm, dermal, systemic	< 0,01	ECETOC TRA 2, Aqueous solution
		longterm, combined, systemic	0,21	

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