

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 26.10.2017

Version 11.1

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

Catalogue No.	809692
Product name	o-Cresol for synthesis
REACH Registration Number	01-2119449552-37-XXXX
CAS-No.	95-48-7

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

Identified uses	Chemical for synthesis 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 o-Cresol for synthesis

Acute toxicity, Category 3, Oral, H301

Acute toxicity, Category 3, Dermal, H311

Skin corrosion, Category 1B, H314

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

H301 + H311 Toxic if swallowed or in contact with skin.

H314 Causes severe skin burns and eye damage.

Precautionary statements

Prevention

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

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Reduced labelling (≤125 ml)

Hazard pictograms



Signal word

Danger

Hazard statements

H301 + H311 Toxic if swallowed or in contact with skin.

H314 Causes severe skin burns and eye damage.

Precautionary statements

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers. In this case the supplier must state on the label whether the substance is a specific isomer or a mixture of isomers.

Index-No. 604-004-00-9

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

3.1 Substance

Formula	2-(CH ₃)C ₆ H ₄ OH	C ₇ H ₈ O (Hill)
Index-No.	604-004-00-9	
EC-No.	202-423-8	
Molar mass	108,14 g/mol	

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

Chemical name (Concentration)

CAS-No. Registration number Classification

o-cresol (<= 100 %)

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

95-48-7 01-2119449552-37-

XXXX

Acute toxicity, Category 3, H301

Acute toxicity, Category 3, H311

Skin corrosion, Category 1B, H314

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

General advice

First aider needs to protect himself.

After inhalation: fresh air. Call in physician.

After contact with skin: rinse out with polyethylene glycol 400 or a mixture of polyethylene glycol 300/ethanol 2:1 and wash with plenty of water. If neither is available wash with plenty of water.

Immediately take off contaminated clothing.

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.

4.2 Most important symptoms and effects, both acute and delayed

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Irritation and corrosion, Cough, Shortness of breath, Dizziness, agitation, spasms, Nausea,
Vomiting, cardiovascular disorders, Headache
Risk of blindness!

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, Carbon dioxide (CO₂), Foam, 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.

Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

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

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

Remove container from danger zone and cool with water. 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

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Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all circumstances. 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.

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 carefully. 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

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Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons.

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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Derived No Effect Level (DNEL)

Worker DNEL, acute	Systemic effects	inhalation	153 mg/m ³
Worker DNEL, acute	Systemic effects	dermal	0,68 mg/kg Body weight
Worker DNEL, longterm	Systemic effects	inhalation	3,5 mg/m ³
Worker DNEL, longterm	Systemic effects	dermal	0,5 mg/kg Body weight
Consumer DNEL, acute	Systemic effects	oral	0,34 mg/kg Body weight
Consumer DNEL, acute	Systemic effects	inhalation	105 mg/m ³
Consumer DNEL, longterm	Systemic effects	oral	0,25 mg/kg Body weight
Consumer DNEL, longterm	Systemic effects	inhalation	0,75 mg/m ³

Predicted No Effect Concentration (PNEC)

PNEC Fresh water	0,1 mg/l
PNEC Marine water	0,01 mg/l
PNEC Aquatic intermittent release	0,062 mg/l
PNEC Sewage treatment plant	1,28 mg/l
PNEC Fresh water sediment	0,58 mg/kg
PNEC Marine sediment	0,058 mg/kg
PNEC Soil	0,0572 mg/kg

8.2 Exposure controls

Engineering measures

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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

Tightly fitting safety goggles

Hand protection

full contact:

Glove material:	polychloroprene
Glove thickness:	0,65 mm
Break through time:	> 480 min

splash contact:

Glove material:	natural latex
Glove thickness:	0,6 mm
Break through time:	> 60 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 720 Camapren® (full contact), KCL 706 Lapren® (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

Flame retardant antistatic protective clothing.

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Respiratory protection

required when dusts/vapours/aerosols are generated.

Recommended Filter type: Filter A-(P3)

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	solid
Colour	white
Odour	phenol-like
Odour Threshold	No information available.
pH	4,8 at 20 g/l 20 °C
Melting point	ca. 31 °C
Boiling point/boiling range	191 - 192 °C at 1.013 hPa
Flash point	81 °C Method: c.c.

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Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	1,3 %(V)
Upper explosion limit	No information available.
Vapour pressure	0,24 hPa at 20 °C 2,5 hPa at 50 °C
Relative vapour density	3,74
Density	1,046 g/cm ³ at 20 °C
Relative density	No information available.
Water solubility	20 g/l at 20 °C
Partition coefficient: n-octanol/water	log Pow: 1,95 (experimental) (IUCRID) Bioaccumulation is not expected.
Auto-ignition temperature	No information available.
Decomposition temperature	> 450 °C Distillable in an undecomposed state at normal pressure.
Viscosity, dynamic	No information available.

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Explosive properties Not classified as explosive.

Oxidizing properties none

9.2 Other data

Ignition temperature 555 °C

SECTION 10. Stability and reactivity

10.1 Reactivity

Forms explosive mixtures with air on intense heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

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

Sensitivity to light

10.3 Possibility of hazardous reactions

Violent reactions possible with:

Strong oxidizing agents, Nitric acid, fuming sulfuric acid

10.4 Conditions to avoid

Strong heating.

10.5 Incompatible materials

Aluminium

10.6 Hazardous decomposition products

no information available

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SECTION 11. Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

LD50 Rat: 121 mg/kg

(RTECS)

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

Acute inhalation toxicity

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

Acute dermal toxicity

LD50 Rat: 620 mg/kg

(RTECS)

Skin irritation

Causes burns.

Eye irritation

Causes serious eye damage.

Risk of blindness!

Sensitisation

This information is not available.

Germ cell mutagenicity

Genotoxicity in vitro

Ames test

Result: negative

(IUCLID)

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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

Systemic effects:

Headache, Nausea, Vomiting, Dizziness, agitation, spasms, cardiovascular disorders

After absorption:

Damage to:

Central nervous system, Liver, Kidney

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

SECTION 12. Ecological information

12.1 Toxicity

Toxicity to fish

LC50 *Oncorhynchus mykiss* (rainbow trout): 8,4 mg/l; 96 h
(ECOTOX Database)

Toxicity to daphnia and other aquatic invertebrates

EC50 *Daphnia magna* (Water flea): 21 mg/l; 48 h
(IUCLID)

EC5 *E.sulcatum*: 17 mg/l
(maximum permissible toxic concentration) (Hommel)

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Toxicity to algae

IC50 *Scenedesmus quadricauda* (Green algae): 11 mg/l
(maximum permissible toxic concentration) (Hommel)

IC50 *Pseudokirchneriella subcapitata* (green algae): 65 mg/l; 96 h
(IUCLID)

Toxicity to bacteria

EC50 *Photobacterium phosphoreum*: 32 mg/l; 30 min
(IUCLID)

EC5 *Pseudomonas putida*: 33 mg/l
(maximum permissible toxic concentration) (Hommel)

12.2 Persistence and degradability

Biodegradability

80 %; 30 d

OECD Test Guideline 301D

Readily biodegradable

Theoretical oxygen demand (ThOD)

2.520 mg/g

(Lit.)

Ratio BOD/ThBOD

BOD5 65 %

(Lit.)

Ratio COD/ThBOD

92 %

(Lit.)

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: 1,95

(experimental)

(IUCLID) Bioaccumulation is not expected.

12.4 Mobility in soil

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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

Additional ecological information

Biological effects:

Hazard for drinking water supplies.

Change in the flavour characteristics of fish protein.

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 UN number	UN 3455
14.2 Proper shipping name	CRESOLS, SOLID
14.3 Class	6.1 (8)
14.4 Packing group	II
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
Tunnel restriction code	D/E

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

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Product name o-Cresol for synthesis

14.1 UN number UN 3455
14.2 Proper shipping name CRESOLS, SOLID
14.3 Class 6.1 (8)
14.4 Packing group II
14.5 Environmentally hazardous --
14.6 Special precautions for user no

Sea transport (IMDG)

14.1 UN number UN 3455
14.2 Proper shipping name CRESOLS, SOLID
14.3 Class 6.1 (8)
14.4 Packing group II
14.5 Environmentally hazardous --
14.6 Special precautions for user yes

EmS F-A S-B

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

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

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 ≥ 0.1 % (w/w).

National legislation

Storage class 6.1A

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.

H301 Toxic if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.

Training advice

Provide adequate information, instruction and training for operators.

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Labelling

Hazard pictograms



Signal word

Danger

Hazard statements

H301 + H311 Toxic if swallowed or in contact with skin.

H314 Causes severe skin burns and eye damage.

Precautionary statements

Prevention

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

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.

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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 o-Cresol for synthesis

EXPOSURE SCENARIO 1 (Industrial use)

1. Industrial use Chemical for synthesis)

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)
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
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)

2. Contributing scenarios: Operational conditions and risk management measures

2.1 Contributing scenario controlling environmental exposure for: ERC2, ERC4

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Amount used

Annual amount per site	5000 t
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Other given operational conditions affecting environmental exposure

Number of emission days per year	300
Emission or Release Factor: Air	0 %
Emission or Release Factor: Water	0 %
Emission or Release Factor: Soil	0 %

2.2 Contributing scenario controlling environmental exposure for: ERC6a

Amount used

Annual amount per site	80 t
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Environment factors not influenced by risk management

Flow rate	50.000 m ³ /d
Dilution Factor (River)	40
Dilution Factor (Coastal Areas)	100

Other given operational conditions affecting environmental exposure

Continuous exposure	
Number of emission days per year	16
Emission or Release Factor: Air	0 %
Emission or Release Factor: Water	2 %
Emission or Release Factor: Soil	0,01 %

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	10.000 m ³ /d
Percentage removed from waste water	87,5 %

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2.3 Contributing scenario controlling environmental exposure for: ERC6a

Amount used

Annual amount per site	400 t
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Environment factors not influenced by risk management

Flow rate	50.000 m ³ /d
Dilution Factor (River)	40
Dilution Factor (Coastal Areas)	100

Other given operational conditions affecting environmental exposure

Continuous exposure

Number of emission days per year	80
Emission or Release Factor: Air	0 %
Emission or Release Factor: Water	2 %
Emission or Release Factor: Soil	0,01 %

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	10.000 m ³ /d
Percentage removed from waste water	87,5 %

2.4 Contributing scenario controlling environmental exposure for: ERC6a

Amount used

Annual amount per site	1200 t
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Environment factors not influenced by risk management

Flow rate	50.000 m ³ /d
Dilution Factor (River)	40
Dilution Factor (Coastal Areas)	100

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Other given operational conditions affecting environmental exposure

Continuous exposure
Number of emission days per year 120
Emission or Release Factor: Air 0 %
Emission or Release Factor: Water 0,05 %
Emission or Release Factor: Soil 0,01 %

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant Municipal sewage treatment plant
Flow rate of sewage treatment 10.000 m³/d
plant effluent
Percentage removed from waste 87,5 %
water

2.5 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8b, PROC9, PROC10, 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) Low volatile liquid
Process Temperature < 70 °C

Frequency and duration of use

Frequency of use 8 hours/day
Frequency of use 230 days/year

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.

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Additional good practice advice beyond the REACH Chemical Safety Assessment

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

2.6 Contributing scenario controlling worker exposure for: PROC5

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)	Low volatile liquid
Process Temperature	< 70 °C

Frequency and duration of use

Frequency of use 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor Indoor with local exhaust ventilation (LEV)

Organisational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

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

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice Use suitable eye protection.

3. Exposure estimation and reference to its source

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Environment

CS	Use descriptor	Msafe	Compartment	RCR	Exposure Assessment Method
2.1	ERC2		All compartments	< 1	Qualitative assessment used to conclude safe use.
2.1	ERC4		All compartments	< 1	Qualitative assessment used to conclude safe use.
2.2	ERC6a		All compartments	< 1	EUSES
2.3	ERC6a		All compartments	< 1	EUSES
2.4	ERC6a		All compartments	< 1	EUSES

Workers

CS	Use descriptor	Exposure duration, route, effect	RCR	Exposure Assessment Method
2.5	PROC1	longterm, inhalative, systemic	< 1	Measured data
		longterm, dermal, systemic	< 1	ECETOC TRA
2.5	PROC2	longterm, inhalative, systemic	< 1	Measured data
		longterm, dermal, systemic	< 1	ECETOC TRA
2.5	PROC3	longterm, inhalative, systemic	< 1	Measured data
		longterm, dermal, systemic	< 1	ECETOC TRA
2.5	PROC4	longterm, inhalative, systemic	< 1	Measured data
		longterm, dermal, systemic	< 1	ECETOC TRA
2.5	PROC8b	longterm, inhalative, systemic	< 1	Measured data
		longterm, dermal, systemic	< 1	ECETOC TRA
2.5	PROC9	longterm, inhalative, systemic	< 1	Measured data
		longterm, dermal, systemic	< 1	ECETOC TRA
2.5	PROC10	longterm, inhalative, systemic	< 1	Measured data
		longterm, dermal, systemic	< 1	ECETOC TRA
2.5	PROC15	longterm, inhalative, systemic	< 1	Measured data
		longterm, dermal, systemic	< 1	ECETOC TRA
2.6	PROC5	longterm, inhalative, systemic	0,64	ECETOC TRA
		longterm, dermal, systemic	0,27	ECETOC TRA
		longterm, combined, systemic	0,92	ECETOC TRA

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

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Product name	o-Cresol for synthesis

For (other) local effects risk management measures are based on qualitative risk characterisation.

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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	809692
Product name	o-Cresol for synthesis

tool SciDeEx® at www.merckmillipore.com/scideex.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 809692
Product name o-Cresol for synthesis

EXPOSURE SCENARIO 2 (Professional use)

1. Professional use Chemical for synthesis)

Sectors of end-use

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

Chemical product category

PC 21 Laboratory chemicals

Process categories

PROC 15 Use as laboratory reagent

Environmental Release Categories

ERC 2 Formulation of preparations

ERC 6a Industrial use resulting in manufacture of another substance (use of intermediates)

2. Contributing scenarios: Operational conditions and risk management measures

2.1 Contributing scenario controlling environmental exposure for: ERC2

Amount used

Annual amount per site 5000 t

Other given operational conditions affecting environmental exposure

Number of emission days per year 300

Emission or Release Factor: Air 0 %

Emission or Release Factor: Water 0 %

Emission or Release Factor: Soil 0 %

2.2 Contributing scenario controlling environmental exposure for: ERC6a

Amount used

Annual amount per site 80 t

Environment factors not influenced by risk management

The Safety Data Sheets for catalogue items are available at www.merckgroup.com

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Product name	o-Cresol for synthesis

Flow rate	50.000 m3/d
Dilution Factor (River)	40
Dilution Factor (Coastal Areas)	100

Other given operational conditions affecting environmental exposure

Continuous exposure

Number of emission days per year	16
Emission or Release Factor: Air	0 %
Emission or Release Factor: Water	2 %
Emission or Release Factor: Soil	0,01 %

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	10.000 m3/d
Percentage removed from waste water	87,5 %

2.3 Contributing scenario controlling environmental exposure for: ERC6a

Amount used

Annual amount per site	400 t
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Environment factors not influenced by risk management

Flow rate	50.000 m3/d
Dilution Factor (River)	40
Dilution Factor (Coastal Areas)	100

Other given operational conditions affecting environmental exposure

Continuous exposure

Number of emission days per year	80
Emission or Release Factor: Air	0 %
Emission or Release Factor: Water	2 %
Emission or Release Factor: Soil	0,01 %

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 809692
Product name o-Cresol for synthesis

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	10.000 m ³ /d
Percentage removed from waste water	87,5 %

2.4 Contributing scenario controlling environmental exposure for: ERC6a

Amount used

Annual amount per site	1200 t
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Environment factors not influenced by risk management

Flow rate	50.000 m ³ /d
Dilution Factor (River)	40
Dilution Factor (Coastal Areas)	100

Other given operational conditions affecting environmental exposure

Continuous exposure	
Number of emission days per year	120
Emission or Release Factor: Air	0 %
Emission or Release Factor: Water	0,05 %
Emission or Release Factor: Soil	0,01 %

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	10.000 m ³ /d
Percentage removed from waste water	87,5 %

2.5 Contributing scenario controlling worker exposure for: PROC15

The Safety Data Sheets for catalogue items are available at www.merckgroup.com

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 809692
Product name o-Cresol for synthesis

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) Low volatile liquid

Process Temperature < 70 °C

Frequency and duration of use

Frequency of use 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor Indoor with local exhaust ventilation (LEV)

Organisational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

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

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice Use suitable eye protection.

3. Exposure estimation and reference to its source

Environment

CS	Use descriptor	Msafe	Compartment	RCR	Exposure Assessment Method
2.1	ERC2		All compartments	< 1	Qualitative assessment used to conclude safe use.
2.2	ERC6a		All compartments	< 1	EUSES
2.3	ERC6a		All compartments	< 1	EUSES
2.4	ERC6a		All compartments	< 1	EUSES

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 809692
Product name o-Cresol for synthesis

Workers

CS	Use descriptor	Exposure duration, route, effect	RCR	Exposure Assessment Method
2.5	PROC15	longterm, inhalative, systemic	0,9	ECETOC TRA
		longterm, dermal, systemic	0,01	ECETOC TRA
		longterm, combined, systemic	0,91	ECETOC TRA

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

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).