

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 16.06.2011

Version 10.0

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

1.1 Product identifier

Catalogue No.	821222
Product name	2,3-Dimethylaniline for synthesis
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	Chemical for synthesis For additional information on uses please refer to the Merck Chemicals portal (www.merck-chemicals.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 3, Inhalation, H331
 Acute toxicity, Category 3, Dermal, H311
 Acute toxicity, Category 3, Oral, H301
 Specific target organ toxicity - repeated exposure, Category 2, H373
 Chronic aquatic toxicity, Category 2, H411

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

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

T	Toxic	R23/24/25 R33
N	Dangerous for the environment	R51/53

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

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Danger

Hazard statements

H331 Toxic if inhaled.
H311 Toxic in contact with skin.
H301 Toxic if swallowed.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P280 Wear protective gloves.
P273 Avoid release to the environment.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

Reduced labelling (≤125 ml)

Hazard pictograms



Signal word

Danger

Hazard statements

H331 Toxic if inhaled.
H311 Toxic in contact with skin.
H301 Toxic if swallowed.

Precautionary statements

P280 Wear protective gloves.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

Index-No. 612-027-00-0

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

Symbol(s)	T N	Toxic Dangerous for the environment
R-phrases(s)	23/24/25-33-51/53	Toxic by inhalation, in contact with skin and if swallowed. Danger of cumulative effects. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrases(s)	28-36/37-45-61	After contact with skin, wash immediately with plenty of soap and water. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid release to the environment. Refer to special instructions/ Safety data sheets.
EC-No.	201-755-0	EC Label

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Reduced labelling (≤125 ml)

Symbol(s)



T

N

R-phrases 23/24/25

S-phrases 36/37-45

Toxic

Dangerous for the environment

Toxic by inhalation, in contact with skin and if swallowed.

Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

Formula	2,3-(CH ₃) ₂ C ₆ H ₃ NH ₂	C ₈ H ₁₁ N (Hill)
CAS-No.	87-59-2	
Index-No.	612-027-00-0	
EC-No.	201-755-0	
Molar mass	121,18 g/mol	

SECTION 4. First aid measures

4.1 Description of first aid measures

General advice

First aider needs to protect himself.

After inhalation: fresh air. Immediately apply artificial respiration. If necessary oxygen. Immediately call in physician.

After skin contact: wash off with plenty of water. Swab with polyethylene glycol 400. Immediately remove contaminated clothing. Call a physician immediately.

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

After swallowing: immediately make victim drink water (two glasses at most). Prevent vomiting if possible. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

irritant effects, Dizziness, euphoria, Nausea, Vomiting

The following applies to aromatic amines in general: systemic effect: methaemoglobinaemia with headache, cardiac dysrhythmia, drop in blood pressure, dyspnoea, and spasms, principal symptom: cyanosis (blue discolouration of the blood).

4.3 Indication of any immediate medical attention and special treatment needed

Subsequently administer: activated charcoal (20 - 40 g in 10% slurry).

Laxative: Sodium sulfate (1 tablespoon/1/4 l water).

SECTION 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

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

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5.2 Special hazards arising from the substance or mixture

Combustible material, 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.
Fire may cause evolution of:
nitrogen oxides

5.3 Advice for firefighters

Special protective equipment for fire-fighters

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 substance contact. Do not breathe vapours, aerosols. 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.

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 carefully with liquid-absorbent material (e.g. Chemizorb®). 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

Observe label precautions.

Work under hood. Do not inhale substance. Avoid generation of vapours/aerosols.

7.2 Conditions for safe storage, including any incompatibilities

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

Store at +15°C to +25°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

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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. Work under hood. Do not inhale substance.

Eye/face protection

Safety glasses

Hand protection

full contact:

Glove material:	butyl-rubber
Glove thickness:	0,7 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 898 Butoject® (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

protective clothing

Respiratory protection

required when 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 empty into drains.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

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Form	liquid
Colour	yellow-orange
Odour	amine-like
Odour Threshold	No information available.
pH	No information available.
Melting point	2 °C
Boiling point/boiling range	224 °C
Flash point	96 °C Method: c.c.
Evaporation rate	No information available.
Flammability (solid, gas)	not applicable
Lower explosion limit	1 %(V)
Upper explosion limit	2,7 %(V)
Vapour pressure	0,13 hPa at 25 °C
Relative vapour density	No information available.
Relative density	0,99 g/cm ³ at 20 °C
Water solubility	1,5 g/l at 20 °C
Partition coefficient: n-octanol/water	log Pow: 2,17 (calculated) (Lit.) Bioaccumulation is not expected.
Autoignition 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

Ignition temperature	545 °C
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SECTION 10. Stability and reactivity

10.1 Reactivity

Forms explosive mixtures with air on intense heating.

10.2 Chemical stability

heat-sensitive

Sensitive to air.

Sensitivity to light

discolouration

10.3 Possibility of hazardous reactions

Exothermic reaction with:

Strong oxidizing agents, Acid anhydrides, Acid chlorides, halogens, acids

10.4 Conditions to avoid

Strong heating.

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

10.5 Incompatible materials

various plastics

10.6 Hazardous decomposition products

in the event of fire: See chapter 5.

SECTION 11. Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

LD50 rat: 933 mg/kg (Regulation (EC) No 1272/2008, Annex VI) (RTECS)

Rapid absorption.

Acute inhalation toxicity

Symptoms: Possible damages:, mucosal irritations

Rapid absorption.

Acute dermal toxicity

Rapid absorption.

Skin irritation

slight irritation

Eye irritation

slight irritation

Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: positive

(National Toxicology Program)

Specific target organ toxicity - single exposure

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

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Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

Based on available data the classification criteria are not met.

11.2 Further information

Systemic effects:

After absorption:

Nausea, Vomiting, euphoria, bradycardia, Dizziness, Methaemoglobinaemia with headache, cardiac arrhythmia, drop in blood pressure, dyspnoea, and spasms, key symptom: cyanosis (blue colouration of the blood).

Effect potentiated by: ethanol

Danger of cumulative effects.

Further data:

This substance should be handled with particular care.

SECTION 12. Ecological information

12.1 Toxicity

Toxicity to daphnia and other aquatic invertebrates.

EC50 Daphnia magna (Water flea): 0,9 mg/l; 24 h (External MSDS)

EC50 Tetrahymen pyriformis: 325 mg/l; 48 h (External MSDS)

Toxicity to bacteria

microtox test EC50 Photobacterium phosphoreum: 47 mg/l; 30 min

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: 2,17

(calculated)

(Lit.) 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

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

ADR/RID

UN 1711 XYLIDINES, LIQUID, 6.1, II

IATA

UN 1711 XYLIDINES, LIQUID, 6.1, II

IMDG

UN 1711 XYLIDINES, LIQUID, 6.1, II

EmS F-A S-A

The transport regulations 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 Toxic
2
Quantity 1: 50 t
Quantity 2: 200 t

96/82/EC
Dangerous for the environment
9b
Quantity 1: 200 t
Quantity 2: 500 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.

||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.
H331 Toxic if inhaled.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.

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Catalogue No.	821222
Product name	2,3-Dimethylaniline for synthesis

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

R23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
R33	Danger of cumulative effects.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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.