

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 13.06.2017

Version 10.8

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

1.1 Product identifier

Catalogue No. 820451

Product name 2,4-Dichlorophenoxyacetic acid 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.

CAS-No. 94-75-7

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.merckgroup.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)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820451

Product name 2,4-Dichlorophenoxyacetic acid for synthesis

Acute toxicity, Category 4, Oral, H302

Serious eye damage, Category 1, H318

Skin sensitisation, Category 1, H317

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

H302 Harmful if swallowed.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention

P273 Avoid release to the environment.

P280 Wear protective gloves.

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.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	820451
Product name	2,4-Dichlorophenoxyacetic acid for synthesis

Index-No. 607-039-00-8

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

3.1 Substance

Formula	2,4-(Cl) ₂ C ₆ H ₃ OCH ₂ COOH	C ₈ H ₆ Cl ₂ O ₃ (Hill)
Index-No.	607-039-00-8	
EC-No.	202-361-1	
Molar mass	221,04 g/mol	

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

Chemical name (Concentration)

CAS-No.	Registration number	Classification
2,4-dichlorophenoxyacetic acid; 2,4-D (ISO) (<= 100 %)		
94-75-7	*)	

Acute toxicity, Category 4, H302

Serious eye damage, Category 1, H318

Skin sensitisation, Category 1, H317

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

Chronic aquatic toxicity, Category 3, H412

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3.2 Mixture

Not applicable

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820451

Product name 2,4-Dichlorophenoxyacetic acid for synthesis

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. Consult a physician.

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, Allergic reactions, Cough, Fever, Diarrhoea, Nausea, Vomiting, Convulsions, muscular symptoms, Shortness of breath
Risk of serious damage to eyes.

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

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

5.2 Special hazards arising from the substance or mixture

Combustible.

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

Fire may cause evolution of:

Hydrogen chloride gas, Phosgene

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820451

Product name 2,4-Dichlorophenoxyacetic acid for synthesis

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. 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 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.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820451

Product name 2,4-Dichlorophenoxyacetic acid for synthesis

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.

Recommended storage temperature see product label.

7.3 Specific end use(s)

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.

Eye/face protection

Tightly fitting safety goggles

Hand protection

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820451

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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 A-(P2)

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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	820451
Product name	2,4-Dichlorophenoxyacetic acid for synthesis

Odour	odourless
Odour Threshold	Not applicable
pH	No information available.
Melting point/range	134 - 137 °C
Boiling point/boiling range	160 °C at 0,53 hPa
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapour pressure	< 0,01 hPa
Relative vapour density	No information available.
Density	1,42 g/cm ³ at 25 °C
Relative density	No information available.
Water solubility	0,3 g/l at 25 °C

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	820451
Product name	2,4-Dichlorophenoxyacetic acid for synthesis

Partition coefficient: n-octanol/water	log Pow: 2,58 - 2,83 (25 °C) OECD Test Guideline 107 Bioaccumulation is not expected. (IUCLID)
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Auto-ignition temperature	No information available.
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Decomposition temperature	> 150 °C
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Viscosity, dynamic	No information available.
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Explosive properties	Not classified as explosive.
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Oxidizing properties	none
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9.2 Other data

Bulk density	ca.720 kg/m ³
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SECTION 10. Stability and reactivity

10.1 Reactivity

has a corrosive effect

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 oxidizing agents, bases

10.4 Conditions to avoid

Strong heating.

10.5 Incompatible materials

various metals

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820451

Product name 2,4-Dichlorophenoxyacetic acid for synthesis

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: 375 mg/kg

(RTECS)

Symptoms: Irritation of mucous membranes, Nausea, Vomiting, Diarrhoea

Rapid absorption.

Acute inhalation toxicity

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

absorption

Acute dermal toxicity

LD50 Rabbit: > 2.000 mg/kg

(IUCLID)

absorption

Skin irritation

This information is not available.

Eye irritation

Causes serious eye damage.

Risk of serious damage to eyes.

Sensitisation

May cause an allergic skin reaction.

Germ cell mutagenicity

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820451

Product name 2,4-Dichlorophenoxyacetic acid for synthesis

Genotoxicity in vitro

Ames test

Result: negative

(IUCLID)

Mutagenicity (mammal cell test): chromosome aberration.

Result: positive

(National Toxicology Program)

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.

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 large quantities:

Fever, tachycardia, Convulsions

Damage to:

Liver, Kidney, Central nervous system

Systemic effects:

muscular symptoms

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820451

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SECTION 12. Ecological information

12.1 Toxicity

Toxicity to fish

LC50 *Lepomis macrochirus* (Bluegill sunfish): 263 mg/l; 96 h
(ECOTOX Database)

Toxicity to daphnia and other aquatic invertebrates

EC50 *Daphnia magna* (Water flea): 25 mg/l; 48 h
(ECOTOX Database)

12.2 Persistence and degradability

Biodegradability

50 %; 15 d

(IUCLID)

Not readily biodegradable.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: 2,58 - 2,83 (25 °C)

OECD Test Guideline 107

Bioaccumulation is not expected. (IUCLID)

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:

Herbicide

Discharge into the environment must be avoided.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	820451
Product name	2,4-Dichlorophenoxyacetic acid for synthesis

SECTION 13. Disposal considerations

Waste treatment methods

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

SECTION 14. Transport information

Land transport (ADR/RID)

14.1 - 14.6	Not classified as dangerous in the meaning of transport regulations.
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Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

14.1 - 14.6	Not classified as dangerous in the meaning of transport regulations.
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Sea transport (IMDG)

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

according to Regulation (EC) No. 1907/2006

Catalogue No.	820451
Product name	2,4-Dichlorophenoxyacetic acid for synthesis

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).
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National legislation

Storage class 10 - 13

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.

H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
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.

SAFETY DATA SHEET

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Catalogue No. 820451

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Labelling

Hazard pictograms



Signal word

Danger

Hazard statements

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Precautionary statements

Prevention

P273 Avoid release to the environment.

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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.

SAFETY DATA SHEET

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Catalogue No. 820451

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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.