SAFETY DATA SHEET

2,4 Dichlorophenoxyacetic acid

D0911

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

1.1. Product identifier
Identification of the product: Raw material
Product code: D0911
Trade name: 2,4 Dichlorophenoxyacetic acid
CAS number: CAS No : 000094-75-7

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use: For professional use only.
Duchefa Biochemie B.V. products are only intended for in vitro laboratory research purposes.

1.3. Details of the supplier of the safety data sheet
Company identification: Duchefa Biochemie B.V.
A. Hofmanweg 71
2031 BH Haarlem The Netherlands
Tel: +31(0)23-5319093
Fax: +31(0)23-5318027
E-mail:info@duchefa.nl

1.4. Emergency telephone number
Emergency phone nr: Tel: (+31)-(0)23-5319093 (local time : 9.00 to 17.00)
National Poison Information Centre :Europe NL : +31 30 274 88 88
(this service is only available to health professionals)
See www.who.int/ipcs/en/ for a local poison centre

SECTION 2 Hazards identification

2.1. Classification of the substance or mixture
Classification EC 67/548 or EC 1999/45
: Xn; R22
Xi; R37-41
R43
R52-53

Hazard Class and Category Code Regulation EC 1272/2008 (CLP)
• Health hazards: Acute toxicity, Oral - Category 4 - Warning (CLP : Acute Tox. 4)
  Skin sensitisation - Category 1 - Warning (CLP : Skin Sens. 1)
  Specific Target Organ Toxicity - Single exposure - Respiratory tract irritation -
  Category 3 - Warning (CLP : STOT SE 3)
• Environmental hazards: Hazardous to the aquatic environment - Acute hazard - Category 3
  Hazardous to the aquatic environment - Chronic hazard - Category 3 (CLP :
  Aquatic Chronic 3)
SECTION 2 Hazards identification (continued)

2.2. Label elements

Labelling EC 67/548 or EC 1999/45

• Symbol(s)

: Xn : Harmful
N : Dangerous for the environment

• R Phrase(s)

: R22 : Harmful if swallowed.
R37 : Irritating to respiratory system.
R41 : Risk of serious damage to eyes.
R43 : May cause sensitization by skin contact.
R52/53 : Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

• S Phrase(s)

: S24/25 : Avoid contact with skin and eyes.
S26 : In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39 : Wear suitable protective clothing, gloves and eye/face protection.
S46 : If swallowed seek medical advice immediately and show this container or label.
S61 : Avoid release to the environment. Refer to special instructions/Safety data sheets.

Labelling Regulation EC 1272/2008 (CLP)

• Hazard pictograms

• Hazard pictograms code

: GHS05 - GHS07

• Signal words

: Danger

• Hazard statements

: H302 - Harmful if swallowed.
H335 - May cause respiratory irritation.
H318 - Causes serious eye damage.
H317 - May cause an allergic skin reaction.
H412 - Harmful to aquatic life with long lasting effects.

• Precautionary statements

- Prevention

: P280 - Wear protective gloves, protective clothing, eye protection, face protection.
P261 - Avoid breathing dust, fume, gas, mist, vapours, spray.
P273 - Avoid release to the environment.

- Response

: P308+P313 - If exposed or concerned : get medical advice.

2.3. Other hazards

None under normal conditions.

SECTION 3 Composition/information on ingredients

Substance / Preparation

: Substance.
2,4-D (ISO)
CAS No :000094-75-7
EC No :202-361-1
Annex No :607-039-00-8
Ref REACH :---

Components

: This product is hazardous.
SECTION 3  Composition/information on ingredients  (continued)

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Contents</th>
<th>CAS No</th>
<th>EC No</th>
<th>Annex No</th>
<th>Ref REACH</th>
<th>Classification</th>
</tr>
</thead>
</table>
| 2,4-D (ISO)    | > 98 %  | 94-75-7 | 202-361-1 | 607-039-00-8 | ----- | Xn; R52  
|                |         |        |       |          |           | Xi; R37-41  
|                |         |        |       |          |           | R43  
|                |         |        |       |          |           | R52-53  
|                |         |        |       |          |           | Eye Dam 1  
|                |         |        |       |          |           | Acute Tox. 4 (oral)  
|                |         |        |       |          |           | STOT SE 3  
|                |         |        |       |          |           | Skin Sens. 1  
|                |         |        |       |          |           | Aquatic Acute 3  
|                |         |        |       |          |           | Aquatic Chronic 3  |

Structural formula: C_8 H_6 Cl_2 O_3  
Molecular weight (g/mol): 221

SECTION 4  First aid measures

4.1. Description of first aid measures

- Inhalation: Remove victim to fresh air. If you feel unwell, seek medical advice.

- Skin contact: Flush with plenty of water. Seek medical advice.

- Eye contact: Rinse with water. Seek medical attention immediately.

- Ingestion: Rinse mouth. Seek medical attention immediately.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms and effects, both acute and delayed: Ingestion may cause nausea, vomiting and diarrhea. Cardiac failure. Unconsciousness. May cause an allergic skin reaction.

4.3. Indication of any immediate medical attention and special treatment needed

Medical attention and special treatment needed: As the elimination occurs via the Kidneys a dialyse is appropriate.

SECTION 5  Fire-fighting measures

5.1. Extinguishing media

- Suitable extinguishing media: Carbon dioxide (CO2). Alcohol foam.  
  Dry powder. Water spray.

- Unsuitable extinguishing media: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Specific hazards: High temperature may liberate dangerous gases. COx

5.3. Advice for fire-fighters

Protection against fire:  
Wear self-contained breathing apparatus, rubber boots and thick rubber gloves. Wear proper protective equipment.

SECTION 6  Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General precautions: Avoid breathing dust, fume, gas, mist, vapours, spray.
SECTION 6  Accidental release measures  (continued)

Personal precautions : Wear suitable protective clothing.

6.2. Environmental precautions

Environmental precautions : Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

Clean up methods : Sweep up dry powder and dispose properly.

6.4. Reference to other sections

Reference to other sections : No Reference

SECTION 7  Handling and storage

7.1. Precautions for safe handling

General : Handle in accordance with good industrial hygiene and safety procedures. Minimize generation of dust.

Store in dry, well-ventilated area.

7.2. Conditions for safe storage, including any incompatibilities

Storage : Store at room temperature.

7.3. Specific end use(s)

Specific end use(s) : For professional use only.

Duchefa Biochemie B.V. products are only intended for in vitro laboratory research purposes.

SECTION 8  Exposure controls/personal protection

8.1. Control parameters

TLV®-TWA [mg/m³] : 10

MAK (AU) Tagesmittelwert (mg/m³) : 1 ( E )

MAK (AU) Kurzzeitwerte (mg/m³) : 4 ( E )

VLA-ED [mg/m³] : 10

HTP-värden - 8 H - [mg/m³] : 10

HTP-värden - 15min - [mg/m³] : 20

8.2. Exposure controls

- Eye protection : Safety glasses.

- Skin protection : Wear suitable protective clothing.

- Hand protection : Use rubber gloves.

- Respiratory protection : P3 Where excessive dust may result, wear approved mask.

SECTION 9  Physical and chemical properties

9.1. Information on basic physical and chemical properties

• Appearance

Appearance : Solid, Powder.

Colour : Light yellow.

• Odour
**SECTION 9 Physical and chemical properties (continued)**

- **Odour**
  - Odour threshold: Characteristic.
  - Odour threshold: Not established.

- **pH**
  - pH value: Not applicable.

- **Melting point / Freezing point**
  - Melting point [°C]: 137

- **Initial boiling point - boiling range**
  - Boiling point [°C]: Not applicable.

- **Flash point**
  - Flash point [°C]: > 100

- **Evaporation rate**
  - Evaporation rate (ether=1): No data available.

- **Flammability**
  - Flammability range [vol% in air]: No data available.

- **Explosion limits (lower - upper)**
  - Explosion limits: No data available.

- **Vapour pressure**
  - Vapour pressure [hPa]: < 1

- **Vapour density**
  - Relative density, gas (air=1): Not established.

- **Relative density**
  - Relative density: Not established.

- **Bulk density [kg/m3]**
  - Circa 750

- **Solubility**
  - Solubility in water: 23.2 pH = 7

- **Partition coefficient : n-octanol / water**
  - Log P octanol / water at 20°C: -0.83 pH = 7

- **Auto-ignition temperature**
  - Auto-ignition temperature [°C]: 435 DIN 51794

- **Thermal decomposition**
  - Thermal decomposition [°C]: > 150

- **Viscosity**
  - Viscosity: No data available.

- **Explosive Properties**
  - Explosive Properties: Not established.

- **Oxidising properties**
  - Oxidising properties: Not established.

### 9.2. Other information
No data available.
SECTION 10  Stability and reactivity

10.1. Reactivity
Reactivity : No data available.

10.2. Chemical stability
Stability : Stable under normal conditions.

10.3. Possibility of hazardous reactions
No data available.

10.4. Conditions to avoid
Conditions to avoid : Heat. Moisture.

10.5. Incompatible materials
Materials to avoid : Oxidizing agents.

10.6. Hazardous decomposition products
Hazardous decomposition products : COx
When heated to decomposition, emits dangerous fumes.

SECTION 11  Toxicological information

11.1. Information on toxicological effects
- Dermal : LD50 (mg/kg) > 2000
  Slight irritant. Rabbit
- Ocular : Severe eye irritant. Rabbit
Rat oral LD50 [mg/kg] : 699
Sensitization : Skin sensitization. Guinea-pig

SECTION 12  Ecological information

12.1. Toxicity
48 Hour-EC50 - Daphnia magna [mg/l] : > 100
IC50 72h Algae [mg/l] : 33.2
96 H-LC50 - Rainbow trout [ppm] : 240

12.2. Persistence - degradability
Product is biodegradable.

12.3. Bioaccumulative potential
No data available.

12.4. Mobility in soil
No data available.

12.5. Results of PBT and vPvB assessment
No data available.

12.6. Other adverse effects
Ecological effects information : Very toxic to aquatic life with long lasting effects.
Environmental precautions : Prevent entry to sewers and public waters.
  Avoid release to the environment.
SECTION 13 Disposal considerations

13.1. Waste treatment methods
General: Avoid release to the environment.
Dispose in a safe manner in accordance with local/national regulations.

SECTION 14 Transport information

14.1. UN Number
General information
UN No.: 3077

14.2. Proper shipping name
UN3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III, (E)

14.3. Transport Hazard Classification
9

Labelling ADR

Land transport
H.I. nr: 90
Proper shipping name: UN3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III, (E)
- ADR Class: 9
- ADR Packing group: III
- Tunnel Restriction: E

Sea transport
- IMO-IMDG code: Class: 9
- IMO Packing group: III
- IMDG-Marine pollution: YES
- Emergency Schedule (EmS) - Fire: F-A S-F

Air transport
- ICAO/IATA: Packaging instructions cargo: 956
  Packaging instructions passenger: 956
- Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (2,4-D (ISO))
- Class: 9
- IATA Packing group: III

14.4. Packing group
III

14.5. Environmental hazards
In case of spillage and/or leakage: Clean up even minor leaks or spills if possible without unnecessary risk.

14.6. Special precautions for user
Personal precautions: The driver shall not attempt to deal with any fire of the load.
Emergency action in case of accident: No naked lights. No smoking.
Keep public away from danger area.
NOTIFY POLICE AND FIRE BRIGADE IMMEDIATELY.
SECTION 14 Transport information (continued)

Additional information: None.

14.7. Bulk transport - annex II Marpol 73/78 - IBC
Not applicable.

SECTION 15 Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
Ensure all national/local regulations are observed.

15.2. Chemical Safety Assessment
Not established.

SECTION 16 Other information

Further information: The information contained herein is bases on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.

Revision: Complete SDS revision

The contents and format of this SDS are in accordance with REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

End of document