

# Material Safety Data Sheet

## 2,4-Dichlorophenoxyacetic acid

ACC# 54714

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** 2,4-Dichlorophenoxyacetic acid

**Catalog Numbers:** AC406960000, AC406961000, AC406965000

**Synonyms:** 2,4-D; 2,4-D acid.

#### Company Identification:

Acros Organics N.V.

One Reagent Lane

Fair Lawn, NJ 07410

**For information in North America, call:** 800-ACROS-01

**For emergencies in the US, call CHEMTREC:** 800-424-9300

### Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
94-75-7	2,4-Dichlorophenoxyacetic acid	99	202-361-1

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: white crystalline powder crystalline powder.

**Warning!** Causes severe eye irritation. Causes respiratory tract irritation. Harmful if swallowed. May cause allergic skin reaction. May be harmful if absorbed through the skin.

**Target Organs:** Central nervous system, respiratory system, eyes, skin.

#### Potential Health Effects

**Eye:** Causes severe eye irritation.

**Skin:** Causes skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. May be harmful if absorbed through the skin.

**Ingestion:** Harmful if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Human fatalities have been reported from acute poisoning.

**Inhalation:** Causes respiratory tract irritation. Can produce delayed pulmonary edema.

**Chronic:** May cause liver and kidney damage. May cause reproductive and fetal effects. Effects may be delayed. Chronic exposure will cause neurological degradation and/or abnormalities.

### Section 4 - First Aid Measures

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

**Skin:** Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

**Ingestion:** Never give anything by mouth to an unconscious person. Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

**Inhalation:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation.

**Notes to Physician:** Treat symptomatically and supportively.

### Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Combustible material; may burn but does not ignite readily.

**Extinguishing Media:** Use water spray, dry chemical, carbon dioxide, or appropriate foam.

**Flash Point:** Not applicable.

**Autoignition Temperature:** Not applicable.

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 2; Flammability: 1; Instability: 0

### Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

## Section 7 - Handling and Storage

**Handling:** Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Use with adequate ventilation. Wash clothing before reuse.

**Storage:** Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
2,4-Dichlorophenoxyacetic acid	10 mg/m <sup>3</sup> TWA	10 mg/m <sup>3</sup> TWA 100 mg/m <sup>3</sup> IDLH	10 mg/m <sup>3</sup> TWA

**OSHA Vacated PELs:** 2,4-Dichlorophenoxyacetic acid: 10 mg/m<sup>3</sup> TWA

### Personal Protective Equipment

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

## Section 9 - Physical and Chemical Properties

**Physical State:** Crystalline powder

**Appearance:** white crystalline powder

**Odor:** practically odorless

**pH:** Not available.

**Vapor Pressure:** <1 mbar @ 20 C

**Vapor Density:** Not available.

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Boiling Point:** 160 deg C @ 0.4mm Hg

**Freezing/Melting Point:** 139 deg C

**Decomposition Temperature:** Not available.

**Solubility:** Slightly soluble.

**Specific Gravity/Density:** 1.5650g/cm<sup>3</sup>

**Molecular Formula:** C<sub>8</sub>H<sub>6</sub>Cl<sub>2</sub>O<sub>3</sub>

**Molecular Weight:** 221.04

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable at room temperature in closed containers under normal storage and handling conditions.

**Conditions to Avoid:** Dust generation, excess heat.

**Incompatibilities with Other Materials:** Strong oxidizing agents.

**Hazardous Decomposition Products:** Hydrogen chloride, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

**Hazardous Polymerization:** Has not been reported.

## Section 11 - Toxicological Information

### RTECS#:

**CAS# 94-75-7: AG6825000**

### LD50/LC50:

CAS# 94-75-7:

Draize test, rabbit, eye: 750 ug/24H Severe;

Draize test, rabbit, skin: 500 mg/24H Mild;

Inhalation, rabbit: LC50 = 1800 mg/m<sup>3</sup>;

Inhalation, rat: LC50 = 1.8 gm/m<sup>3</sup>;

Oral, mouse: LD50 = 347 mg/kg;

Oral, rabbit: LD50 = 699 mg/kg;

Oral, rat: LD50 = 375 mg/kg;

Oral, rat: LD50 = 3670 mg/kg/18H;

Skin, rabbit: LD50 = 1400 mg/kg;

Skin, rabbit: LD50 = 2000 mg/kg;

Skin, rat: LD50 = 1500 mg/kg;

### Carcinogenicity:

CAS# 94-75-7: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** An extensive review of the published literature concluded that there is "reasonable evidence" that occupational exposure to phenoxy herbicides is associated with increased risk for non-Hodgkin's lymphoma. Evidence is weaker or conflicting for soft-tissue sarcomas (Morrison et al, 1992). In another review, however, case-control epidemiological studies were called inconclusive; occupational exposure studies have generally not shown associations between exposure to 2,4-D and cancer (Munro et al, 1992).

**Teratogenicity:** See actual entry in RTECS for complete information.

**Reproductive Effects:** Unconfirmed reports have linked occupational exposure to 2,4-D with human birth defects, miscarriages, and male and female reproductive problems.

**Mutagenicity:** See actual entry in RTECS for complete information.

**Neurotoxicity:** Neurotoxic effects have occurred in humans.

**Other Studies:**

## Section 12 - Ecological Information

**Ecotoxicity:** Fish: Bluegill/Sunfish: 0.9ppm; 48H; Unknown. Water flea Daphnia: 366-389mg/L; 48H; Unknown. No data available.

**Environmental:** Terrestrial: Biodegradation is by far the most important loss process for 2,4-D in most soils, leading to various hydroxylic aromatic products. Aquatic: Will tend to biodegrade with the rate especially dependent upon level of nutrients present, temperature, availability of oxygen, and whether or not the water has a prior history of contamination by 2,4-D or other phenoxyacetic acids. Typical half-lives of 10 to >50 days have been reported. Atmospheric: The primary source of 2,4-D in air is spray applications of the herbicide or its mixture. Half life 1 day.

**Physical:** Expected to slightly bioconcentrate.

**Other:** No information available.

## Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:**

CAS# 94-75-7: waste number U240.

## Section 14 - Transport Information

	<b>US DOT</b>	<b>Canada TDG</b>
<b>Shipping Name:</b>	Not regulated as a hazardous material	No information available.
<b>Hazard Class:</b>		
<b>UN Number:</b>		
<b>Packing Group:</b>		

## Section 15 - Regulatory Information

### US FEDERAL

#### TSCA

CAS# 94-75-7 is listed on the TSCA inventory.

#### Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

#### Chemical Test Rules

CAS# 94-75-7: hydrolysis testing for Chemical Fate

#### Section 12b

None of the chemicals are listed under TSCA Section 12b.

#### TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

#### CERCLA Hazardous Substances and corresponding RQs

CAS# 94-75-7: 100 lb final RQ; 45.4 kg final RQ

#### SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

#### SARA Codes

CAS # 94-75-7: immediate, delayed, fire.

#### Section 313

This material contains 2,4-Dichlorophenoxyacetic acid (CAS# 94-75-7, 99%), which is subject to the reporting requirements of Section 313 of SARA Title III and

#### Clean Air Act:

CAS# 94-75-7 is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

#### Clean Water Act:

CAS# 94-75-7 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

#### OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

#### STATE

CAS# 94-75-7 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

**California Prop 65**

California No Significant Risk Level: None of the chemicals in this product are listed.

**European/International Regulations****European Labeling in Accordance with EC Directives****Hazard Symbols:**

XN

**Risk Phrases:**

- R 22 Harmful if swallowed.
- R 37 Irritating to respiratory system.
- R 41 Risk of serious damage to eyes.
- R 43 May cause sensitization by skin contact.
- R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Safety Phrases:**

- S 24/25 Avoid contact with skin and eyes.
- S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
- S 46 If swallowed, seek medical advice immediately and show this container or label.
- S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

**WGK (Water Danger/Protection)**

CAS# 94-75-7: 2

**Canada - DSL/NDSL**

CAS# 94-75-7 is listed on Canada's DSL List.

**Canada - WHMIS**

This product has a WHMIS classification of D1B, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

**Canadian Ingredient Disclosure List**

CAS# 94-75-7 is not listed on the Canadian Ingredient Disclosure List.

**Section 16 - Additional Information****MSDS Creation Date:** 8/24/1997**Revision #8 Date:** 10/05/2004

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