## 1. PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>Product Code</th>
<th>2100201</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Name</td>
<td>2,4-DB 200</td>
</tr>
<tr>
<td>Synonyms</td>
<td>2,4-DB Dimethylamine Salt</td>
</tr>
<tr>
<td>Formula</td>
<td>C14H18Cl2O3</td>
</tr>
<tr>
<td>CAS Number</td>
<td>2758-42-1</td>
</tr>
<tr>
<td>EPA Registration Number</td>
<td>2749-516</td>
</tr>
<tr>
<td>Contact</td>
<td>ACETO AGRICULTURAL CHEMICALS CORP.</td>
</tr>
<tr>
<td></td>
<td>4 Tri Harbor Court</td>
</tr>
<tr>
<td></td>
<td>Port Washington, NY 11050-4661</td>
</tr>
<tr>
<td></td>
<td>Phone: (516) 627-6000</td>
</tr>
<tr>
<td></td>
<td>Fax: (516) 627-6093</td>
</tr>
<tr>
<td></td>
<td>Email: <a href="mailto:regulatory@aceto.com">regulatory@aceto.com</a></td>
</tr>
<tr>
<td>ChemTrec Emergency Telephone</td>
<td>1-800-424-9300</td>
</tr>
<tr>
<td>Numbers</td>
<td>1-703-527-3887</td>
</tr>
</tbody>
</table>

## 2. HAZARDS IDENTIFICATION

### Emergency Overview
May be fatal if swallowed. May be harmful if inhaled. May be harmful in contact with skin. Corrosive to the eyes and may cause severe damage including blindness. Severe eye irritation. May cause skin irritation. May cause irritation of the mucous membranes. May cause irritation of respiratory tract. Toxic to fish.

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Light, Amber, Clear.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid.</td>
</tr>
<tr>
<td>Odor</td>
<td>Slight, Phenoxy</td>
</tr>
</tbody>
</table>

### OSHA Regulatory Status
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

### Mexico - Grade
Not available
Principle Routes of Exposure  
Not available

Acute Effects

**Eyes**  
Corrosive to the eyes and may cause severe damage including blindness. Severe eye irritation. Avoid contact with eyes.

**Skin**  
May be harmful in contact with skin. Substance may cause slight skin irritation. May aggravate existing skin disease. Avoid contact with skin.

**Inhalation**  
May be harmful by inhalation. May cause irritation of the mucous membranes. May cause irritation of respiratory tract. Avoid breathing vapors or mists. May aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis.

**Ingestion**  
May be fatal if swallowed. Do not ingest.

**Additional Acute Effects**  

**Chronic Effects**  
Avoid repeated exposure.

See Section 11 for additional Toxicological information.

**Aggravated Medical Conditions**  
Not available

**Interactions with Other Chemicals**  
Not available

**Potential Environmental Effects**  
Toxic to fish.

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## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**CAS Number**  
2758-42-1

**Formula**  
C14H18Cl2O3

### Hazardous Components

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No</th>
<th>Weight %</th>
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</thead>
<tbody>
<tr>
<td>Dimethylamine Salt of 4-(2,4-Dichlorphenoxy) Butyric Acid</td>
<td>2758-42-1</td>
<td>26.2</td>
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### Non-hazardous Components

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Ingredients</td>
<td>N/A</td>
<td>73.8</td>
</tr>
</tbody>
</table>

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## 4. FIRST AID MEASURES

**General Advice**  
Show this safety data sheet to the doctor in attendance.

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Revision Date 21-Apr-2011
Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician or Poison Control Centre immediately.

Skin Contact
Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. Discard contaminated shoes. Call a physician or Poison Control Centre immediately.

Inhalation
Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician or Poison Control Centre immediately.

Ingestion
If swallowed, and the victim is conscious and alert, induce vomiting immediately, as directed by medical personnel. Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Centre immediately.

Notes to Physician
Treat symptomatically

Protection of First-aiders
Use personal protective equipment. Avoid contact with skin, eyes and clothing.

5. FIRE-FIGHTING MEASURES

Flammable Properties
Not available.

Suitable Extinguishing Media

Unsuitable Extinguishing Media
Not available.

Hazardous Combustion Products
Thermal decomposition or combustion may produce hazardous gases and/or materials.

Explosion Data

| Sensitivity to mechanical impact | Not available |
| Sensitivity to static discharge   | Not available |

Specific Hazards Arising from the Chemical
Keep product and empty container away from heat and sources of ignition.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA
Health 1  Flammability 1  Instability 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Evacuate personnel to safe areas. Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. In case of insufficient ventilation, wear suitable respiratory equipment.
Environmental Precautions

Local authorities should be advised if significant spillages cannot be contained. Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Should not be released into the environment.

Methods for Containment

Not available

Methods for Cleaning up

Evacuate personnel to safe areas. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Clean contaminated surface thoroughly.

Other Information

Not applicable

7. HANDLING AND STORAGE

Handling

Use only in an area equipped with a safety shower. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation. Use only in well-ventilated areas. Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Avoid repeated exposure.

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labelled containers. Keep out of the reach of children. Protect from freezing. Store at temperatures above 32°F. If product is allowed to freeze, warm to 50°F and agitate thoroughly before using.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Controls

Ensure adequate ventilation, especially in confined areas

Personal Protective Equipment

Eye/face Protection

Goggles. Face-shield.

Skin Protection

Long sleeved clothing. Shoes plus socks. Chemical resistant apron. Chemical resistant boots. Protective gloves. If you want more options, follow the instructions for category A on the EPA chemical-resistance category selection chart.

Respiratory Protection

In case of insufficient ventilation wear suitable respiratory equipment.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice. Wash hands and face before breaks and immediately after handling the product. For additional information consult the EPA Pesticide Label.

9. PHYSICAL AND CHEMICAL PROPERTIES
Appearance Light, Amber, Clear
Physical State Liquid
Odor Slight, Phenoxy
pH 6.92
Flash Point > 100°C
Method Pensky-Marten Closed cup
Autoignition Temperature Not available
Boiling Point/Range Not available
Melting Point/Range 0°C
Flammability Limits in Air Lower Not available Upper Not available
Vapor Pressure Not available
Vapor Density Not available
Specific Gravity 1.094 g/ml@20°C
Density 8.9 – 9.3 lb/Gal
Water Solubility Not available
Reactivity in Water Not available
Viscosity 6.468 Centistokes@20°C
Molecular Weight 294.18

10. STABILITY AND REACTIVITY

Chemical Stability Stable under normal conditions.
Conditions to Avoid Heat, flames and sparks.
Hazardous Decomposition Products Carbon monoxide, Carbon dioxide (CO2), Hydrogen chloride gas, Nitrogen oxides (NOx).
Possibility of Hazardous Reactions None under normal processing

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
LD50 Oral: 635 mg/kg (rat)
LD50 Dermal: > 2,000 mg/kg (rat)
LC50 Inhalation: > 3.27mg/L (rat)

Chronic Toxicity
Carcinogenicity Chronic effects were observed in liver, kidney, heart and blood chemistry. The International Agency for Research on Cancer (IARC) lists exposure to chlorophenoxy herbicides as a class 2B carcinogen, the category for limited evidence for carcinogenicity in humans. However, more current 2,4-DB lifetime feeding studies in rats and mice did not show carcinogenic potential.
Irritation
Eye, rabbit: Severe / Corrosive

Corrosivity
Not available

Sensitization
Not available

Neurological Effects
Not available

Mutagenic Effects
Not available

Reproductive Effects
No impairment of reproductive function attributable to 2,4-DB has been noted in laboratory animal studies. At doses toxic to parental animals, there were effects to kidneys, adrenals and ovaries of offspring. At the highest dose, offspring mortalities and growth reductions were observed during lactation.

Developmental Effects
Studies in laboratory animals with 2,4-DB have shown early resorptions, decreased fetal body weights and skeletal variations in the offspring at doses toxic to mother animals. These are considered to result from maternal toxicity.

Target Organ Effects
Repeated overexposure may cause effects to: Liver, Kidney, Heart, Thyroid, Adrenals, Blood, Stomach, Reduced body weight, Eyes, Skin.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Toxicity to fish. In laboratory and field studies, 2,4-DB-DMAS rapidly dissociated to parent acid in the environment. The average field half-life of 2,4-DB is approximately 7 days.

Persistence / Degradability
Not available

Bioaccumulation / Accumulation
Not available

Mobility in Soil
Not available

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method
Contact waste disposal services. Dispose of in accordance to EPA Pesticide Label Instructions.

Contaminated Packaging
Dispose of in accordance to EPA Pesticide Label Instructions.

US EPA Waste Number
Not available

14. TRANSPORT INFORMATION

DOT
Not regulated
### 15. REGULATORY INFORMATION

#### International Inventories

<table>
<thead>
<tr>
<th>U.S.A. (TSCA)</th>
<th>Canada (DSL)</th>
<th>EU (EINECS)</th>
<th>EU (ELINCS)</th>
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<tbody>
<tr>
<td>Does not Comply</td>
<td>Does not Comply</td>
<td>220-422-0</td>
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</table>

#### Other Ingredients

<table>
<thead>
<tr>
<th>U.S.A. (TSCA)</th>
<th>Canada (DSL)</th>
<th>EU (EINECS)</th>
<th>EU (ELINCS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
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</tbody>
</table>

This material as a whole is exempt from the TSCA Inventory // FIFRA Regulated Pesticide

#### USA

**Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

**SARA 311/312 Hazardous Categorization**

| Acute Health Hazard | Yes |
2100201 - 2,4-DB 200

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic Health Hazard</td>
<td>Yes</td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Sudden Release of Pressure Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td>No</td>
</tr>
</tbody>
</table>

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
This product does not contain any HAPs.

State Regulations
California Proposition 65
This product does not contain any Proposition 65 chemicals.

State Right-to-Know
Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class
Not determined

16. OTHER INFORMATION

Prepared By                        Environmental Health and Safety, Regulatory Affairs
Preparation Date                   21-Apr-2011
Revision Date                      21-Apr-2011
Revision Summary                   Not available

Disclaimer
The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS