1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: Dimension* EC Herbicide

COMPANY IDENTIFICATION
Dow AgroSciences
9330 Zionsville Road
Indianapolis, IN 46268-1189

EMERGENCY TELEPHONE NUMBERS
800-992-5994

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>No</th>
<th>Ingredient</th>
<th>CAS REG NO</th>
<th>WEIGHT (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dithiopyr</td>
<td>97886-45-8</td>
<td>31-33</td>
</tr>
<tr>
<td>2</td>
<td>Cyclohexanone</td>
<td>108-94-1</td>
<td>20-21</td>
</tr>
<tr>
<td>3</td>
<td>Carboxylic acid ester</td>
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<td>48-49</td>
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<td>4</td>
<td>Nonionic surfactant</td>
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<tr>
<td>5</td>
<td>Anionic surfactant</td>
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</tr>
<tr>
<td>6</td>
<td>Aromatic solvent</td>
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<td></td>
</tr>
<tr>
<td>7</td>
<td>Related reaction products</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

See Section 8, Exposure Controls / Personal Protection

3. HAZARDS IDENTIFICATION

Primary Routes of Exposure

Inhalation
Skin Contact
Eye Contact
Dermal Absorption

Inhalation

Inhalation of solvent vapor or mist can cause the following: irritation of nose and throat - dizziness - headache - nausea - drowsiness - slurred speech - stupor - unconsciousness

Eye Contact

Direct contact with material can cause the following: substantial irritation

Skin Contact

Prolonged or repeated skin contact can cause the following: severe skin irritation - defatting and drying of the skin which can lead to irritation and dermatitis - reddening - skin sensitization in susceptible individuals

Delayed Effects

Repeated overexposure to the active ingredient in this material can cause the following: kidney effects - liver effects - blood effects - thyroid damage - adrenal effects. Prolonged or repeated overexposure to cyclohexanone can cause the following: liver damage - kidney damage
4. FIRST AID MEASURES

Inhalation

Move subject to fresh air. If breathing is difficult, give oxygen. Give artificial respiration if breathing has stopped. Get prompt medical attention.

Eye Contact

Flush eyes with a large amount of water for at least 15 minutes. See a physician.

Skin Contact

IMMEDIATELY get under a safety shower. Wash affected skin areas thoroughly with soap and water. Remove and wash contaminated clothing thoroughly. Do not take clothing home to be laundered. Get prompt medical attention.

Ingestion

If swallowed, give 2 glasses of water to drink. IMMEDIATELY see a physician. Never give anything by mouth to an unconscious person. DO NOT induce vomiting, petroleum distillate present. Careful gastric lavage may be indicated.

Note to Physician

Direct toxic effects from cyclohexanone ingestion are dose related. Conditions to be alerted to in case of excessive ingestion are hepatomegaly, hepatic necrosis, renal failure, coagulation abnormalities, and seizures. Liver dysfunction is likely within a short time if the person is symptomatic (i.e. nausea, vomiting). Decontamination of the gut is appropriate after significant ingestion.

5. FIRE FIGHTING MEASURES

Flash Point .............................................. 58.8°C/137.8°F Tag Closed Cup
Auto-ignition Temperature ............................... 420°C/788°F Cyclohexanone
Lower Explosive Limit .................................. 1.1% Cyclohexanone
Upper Explosive Limit .................................. 8.1% Cyclohexanone

Unusual Hazards

Pesticide particulates can become airborne.

Extinguishing Agents

Use the following extinguishing media when fighting fires involving this material: carbon dioxide - dry chemical - water spray - foam
Personal Protective Equipment

Wear self-contained breathing apparatus (pressure-demand MSHA/NIOSH approved or equivalent) and full protective gear.

Special Procedures

Contain run-off. Remain upwind. Avoid breathing smoke. Use water spray to cool containers exposed to fire.

6. ACCIDENTAL RELEASE MEASURES

Personal Protection

Appropriate protective equipment must be worn when handling a spill of this material. See SECTION 8, Exposure Controls/Personal Protection, for recommendations. If exposed to material during clean-up operations, see SECTION 4, First Aid Measures, for actions to follow. Remove all contaminated clothing promptly. Wash all exposed skin areas with soap and water immediately after exposure. Thoroughly launder clothing before reuse. Do not take clothing home to be laundered.

Procedures

Eliminate all ignition sources. Ventilate the spill area. Avoid breathing vapor. Contain spills immediately with inert materials (e.g. sand, earth). Transfer spilled material to suitable containers for recovery or disposal. WARNING: KEEP SPILLS AND CLEANING RUNOFFS OUT OF MUNICIPAL SEwers AND OPEN BODIES OF WATER. NOTE: Spills on porous surfaces can contaminate groundwater.

7. HANDLING AND STORAGE

Storage Conditions

Do not store this material near food, feed or drinking water. The minimum recommended storage temperature for this material is 4.4C/40F. Store in a well-ventilated area. Ground all metal containers during storage and handling. Store away from excessive heat (e.g. steam pipes, radiators), from sources of ignition and from reactive materials.

Handling Procedures

Do not handle material near food, feed or drinking water. Ground all containers when transferring material. This material is a potential skin sensitizer. See SECTION 8, Exposure Controls/Personal Protection, prior to handling.
CONTAINERS HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue (vapors and/or liquid) follow all MSDS and label warnings even after container is emptied. Residual vapors in empty containers may explode on ignition. DO NOT cut, drill, grind or weld on or near container. Triple rinse (or equivalent) and puncture empty container. Dispose empty container in a sanitary landfill or by incineration as allowed by state and local authorities. Avoid inhalation of smoke if incinerated.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Limit Information

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<thead>
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<th>Comp.</th>
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<td>7</td>
<td>Related reaction products</td>
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</table>

<table>
<thead>
<tr>
<th>Comp.</th>
<th>Dow AgroSciences</th>
<th>OSHA</th>
<th>ACGIH</th>
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<td>2</td>
<td>ppm</td>
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<td>75 Skin</td>
</tr>
<tr>
<td>3</td>
<td>None</td>
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<tr>
<td>4</td>
<td>None</td>
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<tr>
<td>5</td>
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<td>None</td>
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</tr>
<tr>
<td>7</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Respiratory Protection

A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. None required if airborne concentrations are maintained below the exposure limit listed in 'Exposure Limit Information'.

**Up to 10 times the TWA/TLV:** Wear a MSHA/NIOSH approved (or equivalent) half-mask, air-purifying respirator.

**Up to 1000 ppm organic vapor:** Wear a MSHA/NIOSH approved (or equivalent) full-face piece, air-purifying respirator.

**Above 1000 ppm organic vapor or Unknown:** Wear a MSHA/NIOSH approved (or equivalent) self-contained breathing apparatus in the positive pressure mode, OR, MSHA/NIOSH approved (or equivalent) full-face piece airline respirator in the positive pressure mode with emergency escape provisions. Air-purifying respirators should be equipped with MSHA/NIOSH approved (or equivalent) cartridges for protection against pesticides.
Eye Protection

Use chemical splash goggles (ANSI Z87.1 or approved equivalent). Eye protection worn must be compatible with respiratory protection system employed.

Hand Protection

Chemical-resistant gloves should be worn whenever this material is handled. The glove(s) listed below may provide protection against permeation. Gloves of other chemically resistant materials may not provide adequate protection: Neoprene. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water.

Other Protection

Use chemically resistant apron or other impervious clothing to avoid prolonged or repeated skin contact.

Engineering Controls (Ventilation)

Use explosion proof local exhaust ventilation with a minimum capture velocity of 100 ft/min. (0.5 m/sec.) at the point of vapor evolution. Refer to the current edition of Industrial Ventilation: A Manual of Recommended Practice published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

Other Protective Equipment

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Appearance</td>
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<td>Color</td>
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<td>Viscosity</td>
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<tr>
<td>Specific Gravity (Water = 1)</td>
<td>1.06 @ 20°C/68°F</td>
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<tr>
<td>Vapor Density (Air = 1)</td>
<td>3.4 Cyclohexanone</td>
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<tr>
<td>Vapor Pressure</td>
<td>3.4 mm Hg @ 20°C/68°F Cyclohexanone</td>
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<tr>
<td>Melting Point</td>
<td>-47°C/-53°F Cyclohexanone</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>156°C/313°F Cyclohexanone</td>
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<td>Solubility in Water</td>
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<tr>
<td>Percent Volatility</td>
<td>60% Solvent</td>
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<td>Evaporation Rate (BAc = 1)</td>
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</tr>
</tbody>
</table>

See Section 5, Fire Fighting Measures
10. STABILITY AND REACTIVITY

Instability

This material is considered stable. However, avoid contact with ignition sources (e.g. sparks, open flame, heated surfaces).

Hazardous Decomposition Products

There are no known hazardous decomposition products for this material.

Hazardous Polymerization

Product will not undergo polymerization.

Incompatibility

Avoid contact with strong oxidizing agents.

11. TOXICOLOGICAL INFORMATION

Acute Data

Toxicity data for a compositionally similar material are listed below.

Oral LD50 - rat: 3600 mg/kg
Dermal LD50 - rabbit: >5000 mg/kg
Inhalation LC50 - rat: 11 mg/L for 4 hr
Eye Irritation - rabbit: substantial irritation
Skin Irritation - rabbit: severe irritation

Subchronic/Chronic Data

The following data pertains to studies conducted with the technical material, 91% min. active ingredient:
In repeat dosing studies (13-week), rodents fed dithiopyr technical exhibited liver toxicity; in dogs, changes in body weight, some organ weights, feed efficiency, and anemia with liver, kidney, thyroid, ovarian and adrenal effects occurred.
Similar doses given to dogs for a longer period (12-months) produced a transient increase in vomiting as well as liver toxicity.
Following repeated skin exposure (3-weeks) to dithiopyr technical, mild transient skin irritation and increased liver weights were the only effects observed in rats.
Carcinogenicity Data

The following data pertains to studies conducted with the technical material, 91% min. active ingredient:
Liver toxicity and effects on adrenals and spleen were observed with long-term (18-month) feeding of dithiopyr technical to mice.
Liver and kidney toxicity were observed in a long-term feeding study (24-month) with rats.
Dithiopyr technical did not produce tumors in any of these studies.

Mutagenicity Data

The following data pertains to studies conducted with the technical material, 91% min. active ingredient:
This product does not pose a mutagenic hazard.

Reproductive/Teratology Data

The following data pertains to studies conducted with the technical material, 91% min. active ingredient:
No birth defects were noted in rats and rabbits given dithiopyr technical orally during pregnancy, even at amounts, which produced adverse effects on the mothers.
No effects were seen on the ability of male or female rats to reproduce when fed dithiopyr technical for two successive generations.
Decreased weight gain with liver, kidney, thyroid and adrenal toxicity were observed in adult animals, while decreased weight gains and liver toxicity were observed in young animals (pups and weanlings).

Sensitization Data

Sensitization data for a compositionally similar material are listed below.
Skin sensitization - guinea pig: Adverse effects observed.

12. ECOLOGICAL INFORMATION

Environmental Toxicity

Bluegill sunfish (Lepomis macrochirus), 96 Hour LC50: 0.47 mg/l
Rainbow trout (Salmo gairdneri), 96 Hour LC50: 0.46 mg/l
Daphnia magna, 48 Hour LC50: 5.2 mg/l
Bobwhite quail, 5 Day Dietary LC50: > 5620 ppm
Mallard duck, 5 Day Dietary LC50: > 5620 ppm
Bobwhite quail, Acute oral LD50: > 2250 mg/kg
Honeybee, LD50: 81 µg/bee
Earthworm, 14 Day Immersion LC50: > 1000 mg/kg

This material is toxic to fish. The above Environmental Toxicity data are from studies conducted on the technical material, 91% min. active ingredient.
13. DISPOSAL CONSIDERATIONS

Procedure

For disposal, incinerate this material at a facility that complies with local, state, and federal regulations. (See 40 CFR 268)

14. TRANSPORT INFORMATION

US DOT Hazard Class ................................................ NON-REGULATED

This classification is used when shipping in non-bulk packages for domestic surface transportation only. Exceptions in CFR 49 Parts 171-177 may apply. Consult CFR 49 Parts 171-177 to determine appropriate classification when shipping in bulk packages or when shipping by air or ocean.

15. REGULATORY INFORMATION

Workplace Classification

This product is considered hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200).

This product is subject to regulation under the Canadian Pest Control Products Act (P.C.P. Act). Therefore, this product is excluded from the supplier labeling and material safety data sheet requirements as specified in Section 12 of the Hazardous Products Act.

SARA TITLE 3: Section 311/312 Categorizations (40CFR 370)

This product is a hazardous chemical under 29CFR 1910.1200, and is categorized as an immediate and delayed health, and flammability physical hazard.

SARA TITLE 3: Section 313 Information (40CFR 372)

This product does not contain a chemical, which is listed in Section 313 at or above de minimis concentrations.

CERCLA Information (40CFR 302.4)

This material is regulated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304. This material is or contains chemical(s) listed in 40 CFR Table 302.4 or non-designated RCRA ICR substance(s). (Non-designated ICR substances apply to materials that will not be reused.) The Reportable Quantity(s) (RQ) are listed below. Releases in excess of its reportable quantity must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.

Cyclohexanone (108-94-1) 5000 lbs.
Waste Classification

When a decision is made to discard this material as supplied, it is classified as a RCRA hazardous waste with the characteristic of ignitability, hazardous waste number: D001

United States

This product is subject to regulation under the US Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and is therefore exempt from U.S. Toxic Substances Control Act (TSCA) Inventory listing requirements.

16. OTHER INFORMATION

MSDS STATUS: New