**Right to Know**

**Hazardous Substance Fact Sheet**

**Common Name:** DICAMBA

**Synonyms:** Banvel; Mediben

**Chemical Name:** Benzoic Acid, 3,6-Dichloro-2-Methoxy-

**Date:** January 1999 **Revision:** January 2008

**CAS Number:** 1918-00-9

**RTK Substance Number:** 0634

**DOT Number:** UN 2769

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**Description and Use**

Dicamba is a colorless, white or brown, crystalline solid. It is a herbicide used to control annual and perennial broad leaf weeds in corn, small grain pastures, and non-cropland.

- **ODOR THRESHOLD=250.8 ppm**
- Odor thresholds vary greatly. Do not rely on odor alone to determine potentially hazardous exposures.

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**Reasons for Citation**

- **Dicamba** is on the Right to Know Hazardous Substance List because it is cited by DOT, DEP, IRIS and EPA.

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**FIRST AID**

**Eye Contact**
- Immediately flush with large amounts of water for at least 15 minutes, lifting upper and lower lids. Remove contact lenses, if worn, while rinsing.

**Skin Contact**
- Quickly remove contaminated clothing. Immediately wash contaminated skin with large amounts of soap and water.

**Inhalation**
- Remove the person from exposure.
- Begin rescue breathing (using universal precautions) if breathing has stopped and CPR if heart action has stopped.
- Transfer promptly to a medical facility.

**EMERGENCY NUMBERS**

Poison Control: 1-800-222-1222
CHEMTREC: 1-800-424-9300
NJDEP Hotline: 1-877-927-6337
National Response Center: 1-800-424-8802

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**Hazard Summary**

<table>
<thead>
<tr>
<th>Hazard Rating</th>
<th>NJDOH</th>
<th>NFPA</th>
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</thead>
<tbody>
<tr>
<td>HEALTH</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>FLAMMABILITY</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>REACTIVITY</td>
<td>0</td>
<td>-</td>
</tr>
</tbody>
</table>

**Reasons for Citation**

- **Dicamba** can affect you when inhaled and may be absorbed through the skin.
- Contact can irritate and burn the skin and eyes.
- Inhaling **Dicamba** can irritate the nose, throat and lungs causing coughing, wheezing and/or shortness of breath.
- Exposure to **Dicamba** can cause headache, dizziness, nausea and vomiting.

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**Workplace Exposure Limits**

No occupational exposure limits have been established for **Dicamba**. However, it may pose a health risk. Always follow safe work practices.

- It should be recognized that **Dicamba** can be absorbed through your skin, thereby increasing your exposure.
Determining Your Exposure

- Read the product manufacturer’s Material Safety Data Sheet (MSDS) and the label to determine product ingredients and important safety and health information about the product mixture.
- For each individual hazardous ingredient, read the New Jersey Department of Health Hazardous Substance Fact Sheet, available on the RTK website (www.nj.gov/health/eoh/rtkweb) or in your facility’s RTK Central File or Hazard Communication Standard file.
- You have a right to this information under the New Jersey Worker and Community Right to Know Act, the Public Employees Occupational Safety and Health (PEOSH) Act if you are a public worker in New Jersey, and under the federal Occupational Safety and Health Act (OSHA) if you are a private worker.
- The New Jersey Right to Know Act requires most employers to label chemicals in the workplace and requires public employers to provide their employees with information concerning chemical hazards and controls. The federal OSHA Hazard Communication Standard (29 CFR 1910.1200) and the PEOSH Hazard Communication Standard (N.J.A.C. 12:100-7) require employers to provide similar information and training to their employees.

This Fact Sheet is a summary of available information regarding the health hazards that may result from exposure. Duration of exposure, concentration of the substance and other factors will affect your susceptibility to any of the potential effects described below.

Health Hazard Information

Acute Health Effects
The following acute (short-term) health effects may occur immediately or shortly after exposure to **Dicamba**:

- Contact can irritate and burn the skin and eyes.
- Inhaling **Dicamba** can irritate the nose and throat causing coughing and wheezing.
- Exposure to **Dicamba** can cause headache, dizziness, nausea and vomiting, loss of appetite, muscle weakness, and exhaustion.

Chronic Health Effects
The following chronic (long-term) health effects can occur at some time after exposure to **Dicamba** and can last for months or years:

Cancer Hazard
- There is limited information that **Dicamba** may cause mutations (genetic changes). Whether or not it poses a cancer hazard needs further study.

Medical

**Medical Testing**
There is no special test for this chemical. However, seek medical attention if illness occurs or overexposure is suspected.

Any evaluation should include a careful history of past and present symptoms with an exam. Medical tests that look for damage already done are not a substitute for controlling exposure.

Request copies of your medical testing. You have a legal right to this information under the OSHA Access to Employee Exposure and Medical Records Standard (29 CFR 1910.1020).
Gloves and Clothing

- Avoid skin contact with DuPont Tyvek®.
- Wear personal protective equipment made from material which cannot be permeated or degraded by the substance. Safety equipment suppliers and manufacturers can provide recommendations on the best protective glove and clothing material for your operation.
- Safety equipment manufacturers recommend Rubber for gloves and DuPont Tyvek® as a protective material for clothing.
- All protective clothing (suits, gloves, footwear, headgear) should be clean, available each day, and put on before work.

Eye Protection

- Wear eye protection with side shields or goggles.
- Wear a face shield along with goggles when working with corrosive, highly irritating or toxic substances.

Respiratory Protection

Improper use of respirators is dangerous. Respirators should only be used if the employer has implemented a written program that takes into account workplace conditions, requirements for worker training, respirator fit testing, and medical exams, as described in the OSHA Respiratory Protection Standard (29 CFR 1910.134).

- For field applications check with your supervisor and your safety equipment supplier regarding the appropriate respiratory equipment.
- Where the potential exists for exposure, use a NIOSH approved negative pressure, air purifying, particulate filter respirator. The filter classifications of dust/mist/fume, paint spray or pesticide prefilters, and filters for radon daughters, have been replaced with the N95 series. Each series has three levels of filtering efficiency: 95%, 99%, and 99.9%.
- Leave the area immediately if (1) while wearing a filter or cartridge respirator you can smell, taste, or otherwise detect Dicamba, (2) while wearing particulate filters abnormal resistance to breathing is experienced, or (3) eye irritation occurs while wearing a full facepiece respirator. Check to make sure the respirator-to-face seal is still good. If it is, replace the filter or cartridge. If the seal is no longer good, you may need a new respirator.
- Consider all potential sources of exposure in your workplace. You may need a combination of filters, prefilters or cartridges to protect against different forms of a chemical (such as vapor and mist) or against a mixture of chemicals.
- Where the potential for high exposure exists, use a NIOSH approved supplied-air respirator with a full facepiece operated in a pressure-demand or other positive-pressure mode. For increased protection use in combination with an auxiliary self-contained breathing apparatus operated in a pressure-demand or other positive-pressure mode.

Fire Hazards

If employees are expected to fight fires, they must be trained and equipped as stated in the OSHA Fire Brigades Standard (29 CFR 1910.156).

- Extinguish fire using an agent suitable for type of surrounding fire. Dicamba itself does not burn.
- POISONOUS GASES ARE PRODUCED IN FIRE, including Hydrogen Chloride.
- Use water spray to keep fire-exposed containers cool.
Spills and Emergencies

If employees are required to clean-up spills, they must be properly trained and equipped. The OSHA Hazardous Waste Operations and Emergency Response Standard (29 CFR 1910.120) may apply.

If Dicamba is spilled, take the following steps:

- Evacuate personnel and secure and control entrance to the area.
- Eliminate all ignition sources.
- Collect powdered material in the most convenient and safe manner and deposit in sealed containers.
- Ventilate and wash area after clean-up is complete.
- It may be necessary to contain and dispose of Dicamba as a HAZARDOUS WASTE. Contact your state Department of Environmental Protection (DEP) or your regional office of the federal Environmental Protection Agency (EPA) for specific recommendations.

Handling and Storage

Prior to working with Dicamba you should be trained on its proper handling and storage.

- Dicamba is not compatible with SULFURIC ACID; STRONG BASES (such as SODIUM HYDROXIDE and POTASSIUM HYDROXIDE); AMMONIA; ALIPHATIC AMINES; ALKANOLAMINES; ISOCYANATES; ALKYLENE OXIDES; and EPICHLOROHYDRIN.
- Store in tightly closed containers in a cool, well-ventilated area away from HEAT and WATER.

Occupational Health Information Resources

The New Jersey Department of Health offers multiple services in occupational health. These services include providing informational resources, educational materials, public presentations, and industrial hygiene and medical investigations and evaluations.

For more information, please contact:

New Jersey Department of Health
Right to Know
PO Box 368
Trenton, NJ 08625-0368
Phone: 609-984-2202
Fax: 609-984-7407
E-mail: rtk@doh.state.nj.us
Web address: http://www.nj.gov/health/eoh/rtkweb

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ACGIH is the American Conference of Governmental Industrial Hygienists. They publish guidelines called Threshold Limit Values (TLVs) for exposure to workplace chemicals.

Acute Exposure Guideline Levels (AEGLs) are established by the EPA. They describe the risk to humans resulting from once-in-a lifetime, or rare, exposure to airborne chemicals.

Boiling point is the temperature at which a substance can change its physical state from a liquid to a gas.

A carcinogen is a substance that causes cancer.

The CAS number is unique, identifying number, assigned by the Chemical Abstracts Service, to a specific chemical.

CFR is the Code of Federal Regulations, which are the regulations of the United States government.

A combustible substance is a solid, liquid or gas that will burn.

A corrosive substance is a gas, liquid or solid that causes destruction of human skin or severe corrosion of containers.

DEP is the New Jersey Department of Environmental Protection.

DOT is the Department of Transportation, the federal agency that regulates the transportation of chemicals.

EPA is the Environmental Protection Agency, the federal agency responsible for regulating environmental hazards.

ERG is the Emergency Response Guidebook. It is a guide for emergency responders for transportation emergencies involving hazardous substances.

Emergency Response Planning Guideline (ERPG) values are intended to provide estimates of concentration ranges where one reasonably might anticipate observing adverse effects.

A fetus is an unborn human or animal.

A flammable substance is a solid, liquid, vapor or gas that will ignite easily and burn rapidly.

The flash point is the temperature at which a liquid or solid gives off vapor that can form a flammable mixture with air.

IARC is the International Agency for Research on Cancer, a scientific group.

Ionization Potential is the amount of energy needed to remove an electron from an atom or molecule. It is measured in electron volts.

IRIS is the Integrated Risk Information System database maintained by federal EPA. The database contains information on human health effects that may result from exposure to various chemicals in the environment.

LEL or Lower Explosive Limit, is the lowest concentration of a combustible substance (gas or vapor) in the air capable of continuing an explosion.

mg/m³ means milligrams of a chemical in a cubic meter of air. It is a measure of concentration (weight/volume).

A mutagen is a substance that causes mutations. A mutation is a change in the genetic material in a body cell. Mutations can lead to birth defects, miscarriages, or cancer.

NFPA is the National Fire Protection Association. It classifies substances according to their fire and explosion hazard.

NIOSH is the National Institute for Occupational Safety and Health. It tests equipment, evaluates and approves respirators, conducts studies of workplace hazards, and proposes standards to OSHA.

NTP is the National Toxicology Program which tests chemicals and reviews evidence for cancer.

OSHA is the federal Occupational Safety and Health Administration, which adopts and enforces health and safety standards.

PEOSHA is the New Jersey Public Employees Occupational Safety and Health Act, which adopts and enforces health and safety standards in public workplaces.

Permeated is the movement of chemicals through protective materials.

PIH is a DOT designation for chemicals which are Poison Inhalation Hazards.

ppm means parts of a substance per million parts of air. It is a measure of concentration by volume in air.

A reactive substance is a solid, liquid or gas that releases energy under certain conditions.

STEL is a Short Term Exposure Limit which is usually a 15-minute exposure that should not be exceeded at any time during a work day.

A teratogen is a substance that causes birth defects by damaging the fetus.

UEL or Upper Explosive Limit is the highest concentration in air above which there is too much fuel (gas or vapor) to begin a reaction or explosion.

Vapor Density is the ratio of the weight of a given volume of one gas to the weight of another (usually Hydrogen), at the same temperature and pressure.

The vapor pressure is a measure of how readily a liquid or a solid mixes with air at its surface. A higher vapor pressure indicates a higher concentration of the substance in air and therefore increases the likelihood of breathing it in.
Common Name: DICAMBA

Synonyms: Banvel; Mediben
CAS No: 1918-00-9
Molecular Formula: C₈H₆Cl₂O₃
RTK Substance No: 0634
Description: Colorless, white or brown crystalline solid

HAZARD DATA

<table>
<thead>
<tr>
<th>Hazard Rating</th>
<th>Firefighting</th>
<th>Reactivity</th>
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<tbody>
<tr>
<td>1 - Health</td>
<td>Extinguish fire using an agent suitable for type of surrounding fire. Dicamba itself does not burn. POISONOUS GASES ARE PRODUCED IN FIRE, including Hydrogen Chloride. Use water spray to keep fire-exposed containers cool.</td>
<td>Dicamba is not compatible with SULFURIC ACID; STRONG BASES (such as SODIUM HYDROXIDE and POTASSIUM HYDROXIDE); AMMONIA, ALIPHATIC AMINES; ALKANOLAMINES; ISOCYANATES; ALKYLENE OXIDES; and EPICHLOROHYDRIN.</td>
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<tr>
<td>1 - Fire</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 - Reactivity</td>
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</table>

DOT#: UN 2769
ERG Guide #: 151
Hazard Class: 6.1 (Poison)

SPILL/LEAKS

Isolation Distance: 25 meters (75 feet)
Fire: 800 meters (1/2 mile)
Collect powdered material in the most convenient and safe manner and deposit in sealed containers. Dicamba is harmful to aquatic organisms.

PHYSICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Odor Threshold</td>
<td>250.8 ppm</td>
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<tr>
<td>Flash Point</td>
<td>Not combustible</td>
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<tr>
<td>Vapor Density</td>
<td>7.64 (air = 1)</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>0.00375 mm Hg at 212°F (100°C)</td>
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<tr>
<td>Specific Gravity</td>
<td>1.56 (water =1)</td>
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<tr>
<td>Water Solubility</td>
<td>Slightly soluble</td>
</tr>
<tr>
<td>Melting Point</td>
<td>237° to 241°F (114° to 116°C)</td>
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<tr>
<td>Molecular Weight</td>
<td>221</td>
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EXPOSURE LIMITS

No occupational exposure limits have been established for Dicamba.

PROTECTIVE EQUIPMENT

Gloves: Rubber
Coveralls: DuPont Tyvek®
Respirator: APR with High efficiency filters or Supplied air

HEALTH EFFECTS

Eyes: Irritation, burns
Skin: Irritation, burns
Inhalation: Nose, throat and lung irritation with coughing and shortness of breath, Headache, nausea, vomiting and muscle weakness

FIRST AID AND DECONTAMINATION

Remove the person from exposure.
Flush eyes with large amounts of water for at least 15 minutes. Remove contact lenses if worn.
Quickly remove contaminated clothing and wash contaminated skin with large amounts of soap and water.
Begin artificial respiration if breathing has stopped and CPR if necessary.
Transfer to a medical facility.