Gowan®

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Formulator: Gowan Company
P.O. Box 5569
Yuma, Arizona 85366-5569
(800) 883-1844

Emergency Phone: (928) 783-3803
For 24-Hour Emergency Assistance (Spill, Leak, Fire, or Exposure), Call CHEMTREC®:
Inside the U.S.: (800) 424-9300
Outside the U.S.: (703) 527-3887
For *Medical* Emergency: (888) 478-0798

Product:	**Imperium® Selective Herbicide**		
EPA Signal Word:	Warning	**EPA Registration No.:**	10163-285
Active Ingredient:	EPTC (67.8%)	**CAS No.:**	759-94-4
Chemical Name:	S-ethyl dipropylthiocarbamate		
Chemical Class:	Thiocarbamate or carbamothioate herbicide		
Active Ingredient:	Acetochlor Technical (16.9%)	**CAS No.:**	34256-82-1
Chemical Name:	2-chloro-2'-methyl-6'-ethyl-N-ethoxymethylacetanilide		
Chemical Class:	Chloroacetamide		

2. HAZARDS IDENTIFICATION

Physical Properties

Appearance: Clear, amber liquid
Odor: Aromatic

Symptoms of Acute Exposure

May cause eye and skin irritation.
This product is a cholinesterase inhibitor. Principal routes of exposure are skin contact and inhalation. Symptoms of cholinesterase inhibition may include salivation, sweating, headache, nausea, muscle twitching, tremors, poor coordination, blurred vision, tears, abdominal cramps, diarrhea and chest discomfort. Exposure to high vapor levels may cause headache, dizziness, numbness, nausea, incoordination, or other central nervous system effects.

Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases.

Unusual Fire, Explosion, and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

3. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME	OSHA – PEL	ACGIH – TLV	OTHER	NTP/IARC/OSHA CARCINOGEN
EPTC (67.8%)	Not Established	Not Established	0.3 mg/m^3 TWA	No
Acetochlor Technical (16.9%)	Not Established	Not Established	0.1 mg/m^3 TWA*	No

*recommended by manufacturer

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

Only the identities of the active ingredient(s) and any *hazardous* inert ingredients are listed. Specific information on all of this product's ingredients can be obtained by the treating medical professional or spill emergency responder for the management of exposures, spills, or safety assessments.

4. FIRST AID MEASURES

If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible • Call a poison control center or doctor for further treatment advice.

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage. This product contains EPTC a thiocarbamate that inhibits cholinesterase. If symptoms of cholinesterase inhibition are present, atropine by injection is antidotal. Pralidoxime chloride (2-PAM) is NOT recommended as an antidote for this compound. Thiocarbamates have been shown in laboratory animals to cause a disulfiram (Antabuse) type reaction in combination with alcohol.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact **1-888-478-0798** for emergency medical treatment information.

5. FIRE FIGHTING MEASURES

Fire and Explosion

Flash Point (Test Method): > 200°F
Flammability: Combustible Liquid

Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

In Case of Fire

Use dry chemical, foam or CO2 extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

6. ACCIDENTAL RELEASE MEASURES

In Case of Spills or Leaks

Control the spill at its source. Contain the spill to prevent it from spreading, contaminating soil, or entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. If a solid, sweep up material and place in a compatible disposal container. If a liquid, cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. HANDLING AND STORAGE

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

Ingestion:	Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.
Eye Contact:	Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
Skin Contact:	Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.
Inhalation:	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below exposure limits. A NIOSH-certified combination air-purifying respirator with an N, P or R 95 or HE class filter and an organic vapor cartridge may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a pressure demand atmosphere-supplying respirator if there is any potential for uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, amber liquid
Odor:	Aromatic
Boiling Point:	Not available
Specific gravity/ Density:	1.00 g/ml @ 77°F (25°C)
pH:	4.8 (1% w/w dilution in deionized water)
Solubility in H_2O	
EPTC	370 mg/l @ 68°F (20°C) (99.7% pure)
Acetochlor Technical	223 ppm @ 77°F (25°C)
Vapor Pressure	
EPTC	0.1 mmHg @ 77°F (25°C)
Acetochlor Technical	3.4 x 10(-5) mmHg @ 77°F (25°C)

10. STABILITY AND REACTIVITY

Stability:	Stable under normal use and storage conditions.
Hazardous Polymerization:	Will not occur.
Conditions to Avoid:	None known.
Materials to Avoid:	None known.
Hazardous Decomposition Products:	Can decompose at high temperatures forming toxic gases.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies

Oral (LD_{50} Rat):	1,464 mg/kg body weight
Dermal (LD_{50} Rat):	See “Other Toxicity Information”, Section 11
Inhalation (LC_{50} Rat):	See “Other Toxicity Information”, Section 11
Eye Contact:	Moderately Irritating (Rabbit)
Skin Contact:	Severely Irritating (Rabbit)
Skin Sensitization:	A skin sensitizer in animal tests

11. TOXICOLOGICAL INFORMATION - Continued

Carcinogenic Potential

EPTC	Not carcinogenic in rat or mouse tests.
Acetochlor	Hyperplasia and adenomas of the nasal epithelium were seen in a 2-year rat feeding study. The mechanism of tumor formation has been postulated as generation of formaldehyde from the ethoxymethyl side chain or acetochlor. These adenomas were not considered life-threatening tumors. Increased incidence of thyroid tumors was seen in high-dose female rates, but it is of doubtful significance.

Other Toxicity Information

This product is not considered to be a skin absorption hazard. The Dermal LD_{50} is not available for the formulation. The Dermal LD_{50} results for the active ingredients are as follows:

EPTC	LD_{50} (rat): 5,000 mg/kg
Acetochlor	LD_{50} (rat): 4,166 mg/kg

The Inhalation LC_{50} is not available for the formulation. The Inhalation LC_{50} results for the active ingredients are as follows:

EPTC	LC_{50} (rat): 3.8 mg/l (4 hours)
Acetochlor	LC_{50} (rat): 3.99mg/l (4 hours)

This product is a cholinesterase inhibitor. Principal routes of exposure are skin absorption and inhalation. Severe cases of chlolinesterase inhibition may lead to convulsion, pulmonary edema, respiratory failure and death.

12. ECOLOGICAL INFORMATION

Summary of Effects

EPTC:

Toxic to fish.

Acetochlor Technical:

Very toxic to fish.

ECO-AcuteToxicity

EPTC:

Rainbow Trout 96-hour LC_{50} 19 mg/l
Bluegill Sunfish 96-hour LC_{50} 14 mg/l
Bobwhite 8-day Dietary LC_{50} 20,000 mg/kg
Bees LC_{50}/EC_{50} 11 µg/bee
Worms 14-days LC_{50} 267 mg/kg

Acetochlor Technical:

Rainbow Trout 96-hour LC_{50} 0.45 mg/l
Bluegill Sunfish 96-hour LC_{50} 1.3 mg/l
Daphnia magna 48-hour LC_{50} 16 mg/l
Bobwhite Oral LD_{50} 1,260 mg/kg
Bobwhite 8-day Dietary LC_{50} > 5,620 ppm
Mallard 8-day Dietary LC_{50} > 5,620 ppm
Bee Oral LD_{50} 1,725 µg/bee

Environmental Fate

EPTC:

No data available for the formulation. The information presented here is for the active ingredient #2. A thorough review of environmental information is not possible in this document. In plants, EPTC is rapidly metabolized to CO_2 and other metabolites. In soil, EPTC rapidly undergoes microbial degradation to a mercaptan residue, an amino residue and CO_2.

Acetochlor Technical:

No data available for the formulation. The information presented here is for the active ingredient #1. A thorough review of environmental information is not possible in this document. In com and soybeans, rapidly absorbed and metabolized in the germinating plant. Absorbed by soil with little leaching. Microbial degradation accounts for most loss from soil; DT_{50} 8 - 18 days.

13. DISPOSAL CONSIDERATION

Pesticide Disposal
Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Container Disposal
Triple rinse (or equivalent), then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

For Bulk/Mini-Bulk Containers
Container Disposal
Reseal container and offer for reconditioning, or triple rinse (or equivalent) and offer for recycling or reconditioning, or clean in accordance with manufacturer's instructions.
Container Precautions
Before refilling, inspect thoroughly for damage such as cracks, punctures, bulges, dents, abrasions, and damaged or worn threads on closure devices.

FOR MINI-BULK CONTAINERS:
REFILL ONLY WITH IMPERIUM SELECTIVE HERBICIDE. The contents of this container cannot be completely removed by cleaning. Refilling with materials other than IMPERIUM Selective Herbicide will result in contamination and may weaken container. After filling and before transporting, check for leaks. Do not refill or transport damaged or leaking container. Circulation before dispensing is required.

CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER!

14. TRANSPORT INFORMATION

DOT Classification
Not regulated

International Maritime Organization
UN3082, Environmentally hazardous substances, liquid, N.O.S., (Acetochlor 16.9%), 9, PG III, Marine pollutant

International Civil Aviation Organization
Not regulated

15. REGULATORY INFORMATION

SARA Title III Classification

Section 302/304:	Not applicable
Section 311/312:	Immediate (acute) health hazard Delayed (chronic) health hazard
Section 313 chemical(s):	EPTC (67.8%) CAS No. 759-94-4

Proposition 65
WARNING: This product contains a chemical (acetochlor) known to the State of California to cause cancer and birth defects or other reproductive harm. This product contains a chemical (EPTC – ethyl dipropylthiocarbamate) known to the State of California to cause developmental harm.

CERCLA Reportable Quantity (RQ)
None

RCRA Classification
Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

TSCA Status
Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

NFPA Hazard Ratings

Health:	3
Flammability:	1
Reactivity:	0

0	Least
1	Slight
2	Moderate
3	High
4	Severe

Prepared By:

Gowan Company
(800) 883-1844

Notice: The information and recommendations contained herein are provided in good faith and are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information herein.