



MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

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

Emergency telephone number: (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:	Betasan® 4.8E	PCP Registration No.:	9057
Signal Word:	WARNING	CAS No.:	741-58-2
Active Ingredient:	Bensulide (480 g/L)		
Chemical Name:	S-(O,O-diisopropyl phosphorodithioate) ester of N-(2-mercaptoethyl) benzenesulfonamide		
Chemical Class:	Organophosphorus Pesticide		

2. HAZARDS IDENTIFICATION

Physical Properties

Appearance: Amber liquid

Symptoms of Acute Exposure

Bensulide produces cholinesterase inhibition in experimental animals. Symptoms of cholinesterase inhibition include salivation, sweating, headache, nausea, muscle twitching, tremors, uncoordinated, blurred vision, tears, abdominal cramps, diarrhoea and chest discomfort.

Ingestion: Irritation of the gastrointestinal tract is associated with ingestion of the hydrocarbon solvent. Ingestion of excessive quantities can also induce signs of central nervous system depression (e.g., drowsiness, dizziness, loss of coordination and fatigue). Small amounts of the hydrocarbon solvent, if aspirated into the lungs during ingestion or subsequent vomiting, may induce severe lung congestion resulting in laboured breathing, coma and death.

Eye contact: Causes eye irritation.

Skin contact: Causes skin irritation.

Medical Conditions Likely to be Aggravated by Exposure

There are no chronic health effects studies on this specific product.

3. COMPOSITION/INFORMATION ON INGREDIENTS

	Component	CAS No.	% by weight
Active Ingredient:	Bensulide	741-58-2	46%
Other Ingredient:	Naphthalene	91-20-3	3.8%

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 a known exposure occurs or is suspected, IMMEDIATELY start the procedures given below. If further treatment is required, contact a poison control centre, a physician or the nearest hospital IMMEDIATELY. Inform the person contacted of the type and extent of exposure, describe the victim's symptoms and follow the advice given.

NOTE: Be sure to advise the physician that the compound is a cholinesterase inhibitor and follow the physician's advice.

If in eyes	<ul style="list-style-type: none">• Hold eyelids apart and flush eyes with large amounts of clean, running water for at least 15 minutes.• Call a physician IMMEDIATELY or call a poison control centre.
If swallowed	<ul style="list-style-type: none">• Call a physician or poison control centre IMMEDIATELY.• IMMEDIATELY give large amounts of water and INDUCE VOMITING by gagging the victim with a finger placed on the back of the victim's tongue.• Give fluids until vomitus is clear.• Do not induce vomiting or give anything by mouth to an unconscious or convulsing person.
If inhaled	<ul style="list-style-type: none">• Remove victim to fresh air.• If not breathing, give artificial respiration, preferably mouth-to-mouth.• If breathing is difficult, give oxygen, preferably with a physician's advice.
If on skin	<ul style="list-style-type: none">• Remove contaminated clothing and shoes and IMMEDIATELY wash affected areas with soap and water.• Get medical attention or contact a poison control centre IMMEDIATELY if irritation occurs.• Wash clothing before reuse

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

FOR MEDICAL EMERGENCIES INVOLVING THIS PRODUCT, CALL TOLL FREE: (888) 478-0798

5. FIRE FIGHTING MEASURES

Flashpoint (test method):	67°C (154°F), (PMCC)
Flammable Limits (% in air):	Not available
Autoignition Temperature:	Not available
Flammability:	Flammable

Fire Fighting Procedures

The active ingredient in this formulation is a cholinesterase inhibitor. Products of combustion are irritating to the respiratory tract and may cause breathing difficulty and pulmonary oedema. Symptoms may be delayed several hours or longer depending upon the extent of exposure. As in any fire, prevent human exposure to fire, smoke, fumes, or products of combustion. Evacuate nonessential personnel from the fire area. Firefighters should wear full-face self-contained breathing apparatus and impervious protective clothing. Use standard fire fighting techniques to extinguish fires involving this material: use water, dry chemicals, foam or carbon dioxide. If not leaking, keep fire-exposed containers cool with water spray to prevent rupture due to excessive heat. High-pressure water hose may spread product from broken containers increasing contamination or fire hazard. Contaminated buildings, areas and equipment must not be used until they are properly decontaminated.

Extinguishing Media

In case of fire, use water (fog), foam, dry chemical or carbon dioxide (CO₂).

Hazardous Decomposition Products

Combustion and toxic materials.

Unusual Fire, Explosion, and Reactivity Hazards

Considered combustible. Supports combustion and may decompose under fire conditions to give off toxic materials. Do not use, pour, spill or store near heat or open flame.

6. ACCIDENTAL RELEASE MEASURES

In Case of Spills or Leaks

Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices. Small spills can be handled routinely. Use adequate ventilation or wear an air-supplied respirator to prevent inhalation. Wear suitable protective clothing and eye protection to prevent skin and eye contact. Spread a suitable absorbent such as clay, sawdust or kitty litter on the spilled material. Place sweepings in an appropriate chemical waste container. Generously cover the contaminated areas with common household detergent. Using a stiff brush and small amounts of water; work the detergent into the spill material forming a slurry. Do not splatter on one's self or bystanders and completely avoid skin or eye contact with this material. Brush the slurry into cracks and crevices and allow to stand for 2-3 minutes. Spread absorbents on the slurry liquid and shovel the absorbed material into the container, repeat if necessary. Flush the area with water while observing proper environmental considerations. Seal container and dispose of in approved pesticide landfill. Large spills should be handled according to a predetermined plan. For assistance in developing a plan, contact Gowan Company.

7. HANDLING AND STORAGE

Storage

Do not store near seeds or fertilizer. Do not store near heat or open flames. Protect from temperatures below 6°C (43°F). Product crystallizes at lower temperatures. Warm or store at higher temperatures, and mix to dissolve crystals and assure uniformity before use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal Protection (Manufacturing and Packaging Employees)

Eye/face protection: Not required; use normal safety precautions.

Skin protection: Applicators and other handlers must wear a long-sleeved shirt and long pants, chemical-resistant gloves such as barrier laminate or Viton ≥14mils, and shoes plus socks.

Respiratory protection: Not required, but to avoid inhalation of vapours or spray mist, use a MSHA/NIOSH approved respirator for pesticides.

Applicators/handlers: A long-sleeved shirt and long pants, chemical-resistant gloves such as barrier laminate or Viton ≥14 mils, and shoes plus socks are required.

Additional protection information: Have eyewash and safety shower easily accessible to the work area. Prevent skin and eye contact with this material. Avoid inhalation of spray mist. Shower at the end of each workday. Follow manufacturer's instructions for cleaning/maintaining personal protective equipment (PPE). If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls

This product is intended for use outdoors where engineering controls are not necessary. If use conditions are different (e.g. product reformulation or repackaging), employee exposure should be minimized using traditional techniques such as enclosed system design and/or local exhaust ventilation.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Amber liquid
Melting Point:	Not applicable
Boiling Point:	Not available
Specific Gravity/Density:	1.05 at 20°C
Solubility in H₂O:	Readily forms an emulsion
Vapour Pressure	
Bensulide:	< 0.133 mPa at 25°C

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Hazardous Polymerization:	Will not occur.
Decomposition Products:	Combustion and toxic materials.
Hazardous Mixtures:	Not known.
Conditions to Avoid:	Relatively non-reactive. Non-corrosive to materials commonly used in the construction of process equipment, storage and shipping containers.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies

Oral LD ₅₀ (rat):	1115 g/kg body weight (female) 1591 mg/kg body weight (male)
	Slight toxicity
Dermal (rabbit):	Moderate toxicity
Inhalation LC ₅₀ (rabbit):	>8 mg/L air – 1 hour
Eye Contact (rabbit):	Severe irritation
Skin Contact (rabbit):	Moderate irritation
Skin Absorption:	Acute Dermal LD ₅₀ (rabbit): >2 g/kg Practically non-toxic

Carcinogenic Potential

None

12. ECOLOGICAL INFORMATION

Summary of Effects

This product contains a petroleum distillate which is moderately to highly toxic to aquatic organisms. Avoid contamination of aquatic systems during application. Do not contaminate these systems through direct application, disposal of waste or cleaning of equipment. This product is toxic to fish. Leave a buffer zone of untreated ground areas draining into bodies of water.

13. DISPOSAL CONSIDERATIONS

Observe all labelled safeguards until container is cleaned, reconditioned or destroyed. Completely empty container into transfer or application equipment. Do not reuse container. Triple or jet rinse the container then offer for recycling or reconditioning. If offering for reconditioning, contact the manufacturer. If offering for recycling, remove all caps, labels and booklets and take to a pesticide container depot. Recycling sites are identified on the CropLife Canada (Clean Farms) website at: www.croplife.ca. For information on the disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer or the provincial regulatory agency in case of spill, and for clean-up of spills.

14. TRANSPORT INFORMATION

TDG Classification

Not regulated

International Maritime Organization

UN1993, FLAMMABLE LIQUID, N.O.S. (contains petroleum naphtha), 3, PG III

International Civil Aviation Organization

UN1993, FLAMMABLE LIQUID, N.O.S. (contains petroleum naphtha), 3, PG III

15. REGULATORY INFORMATION

WHMIS Classification

This product is registered under the Pest Control Products Act and has been prepared in accordance with the WHMIS requirements.

16. OTHER INFORMATION

NFPA Hazard Ratings

Health: 1
Flammability: 2
Reactivity: 0

0	Least
1	Slight
2	Moderate
3	High
4	Severe

Prepared by:

Gowan Company
(800) 883-1844

<p>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.</p>
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