



MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Formulator: Gowan Company
P.O. Box 5569
Yuma, Arizona 85366-5569
(928) 783-8844

Emergency Phone: (928) 783-3803
For 24-Hour Emergency Assistance (Spill, Leak, Fire, or Exposure), Call CHEMTREC®:
For MEDICAL Emergency:

Inside the U.S.: (800) 424-9300
Outside the U.S.: (703) 527-3887
(888) 478-0798

Product: Carzol® SP Insecticide

EPA Signal Word: Danger-Poison **EPA Registration No.:** 10163-265

Active Ingredient: Formetanate hydrochloride (92.0%) **CAS No.:** 23422-53-9

Chemical Name: N, N-dimethyl-N'[3-[[[(methylamino) carbonyl]oxy]phenyl]methanimidamide monohydrochloride

Chemical Class: Carbamate

2. HAZARDS IDENTIFICATION

Physical Properties

Appearance: White crystal
Odor: Odorless

Symptoms of Acute Exposure

Fatal if swallowed. Can cause irreversible eye damage. Overexposure to formetanate hydrochloride produces symptoms associated with cholinesterase inhibition. The symptoms of cholinesterase inhibition are nausea, vomiting dizziness, tremors, salivation and constricted pupils.

Medical Conditions Likely to be Aggravated by Exposure

No specific conditions are known; may aggravate pre-existing conditions of eyes and the respiratory system.

Hazardous Decomposition Products

May give off poisonous fumes including hydrogen chloride and oxides of nitrogen.

Unusual Fire, Explosion, and Reactivity Hazards

May give off poisonous fumes including hydrogen chloride and oxides of nitrogen. Dispersion of fine dust in the air may form an explosion mixture

3. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME	OSHA – PEL	ACGIH – TLV	OTHER	NTP/IARC/OSHA CARCINOGEN
Formetanate hydrochloride (92.0%)	Not established	Not established	Not established	No

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 swallowed
 - Call 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 do so by the poison control center or doctor.
 - Do not give anything by mouth to an unconscious person.
- 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.
 - 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 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.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

NOTE TO PHYSICIAN

Carzol SP is a carbamate, which acts as a cholinesterase inhibitor. Specific antidote – Atropine. Do not use 2-PAM.

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

5. FIRE FIGHTING MEASURES

Flashpoint (test method): Not applicable

Flammability: Not applicable

Appropriate Extinguishing Media

Use dry chemical, foam, or carbon dioxide.

Fire Fighting Guidance

Wear positive pressure self-contained breathing apparatus.

Unusual Fire, Explosion, and Reactivity Hazards

May give off poisonous fumes including hydrogen chloride and oxides of nitrogen. Dispersion of fine dust in the air may form an explosion mixture

6. ACCIDENTAL RELEASE MEASURES

General and Disposal

Use proper protective equipment to minimize personal exposure (see section 8). Take all necessary action to prevent and remedy the effects of the spill. Ensure that the disposal is in compliance with federal or local disposal regulations. Notify the appropriate authorities immediately. (See Section 15 for applicable Reportable Quantity (RQ) and other federal regulatory information).

In Case of Spills or Leaks

Wear gloves (natural or synthetic rubber) when removing spillage and cleaning up contaminated areas. Carzol SP spilled on the floor may be swept up with a broom and collected in a box, plastic bag, or tin can for further usage. If spilled material is not used immediately, enclose the container in a plastic bag, tie it at the top, and firmly attach a Carzol SP label to the bag. Remove as much as possible of the remaining material using a damp rag. Then scrub the area thoroughly with water containing ammonia and detergent followed by a clean water rinse.

7. HANDLING AND STORAGE

Handling

DANGER, POISON. FATAL IF SWALLOWED. DO NOT BREATHE SPRAY MIST. CAN CAUSE IRREVERSIBLE EYE DAMAGE. MAY CAUSE SKIN SENSITIZATION. DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING. Use recommended equipment while handling this product (See Section 8).

Precautions in Storing

Store in a cool, dry place and away from food or feed products. Do not contaminate water, food or feed by storage or disposal

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS.

Mixers, Loaders, Flaggers, Applicators (other than airblast applicators) and Other Handlers Must Wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Protective eyewear
- Waterproof gloves
- Chemical resistant apron when mixing, loading or cleaning of equipment

Applicators Involved in Airblast Applications Must Wear:

- Coveralls worn over long-sleeved shirt and long pants
- Waterproof gloves
- Protective eyewear
- Chemical-resistant footwear plus socks
- Chemical-resistant headgear
- Dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C), or a NIOSH approved respirator with any N, R, P or HE filter).

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White crystals
Odor:	Odorless
Melting Point:	190 – 202°C
Specific Gravity/ Density:	Approximately 0.3 g/cm ³
Partition Coefficient:	Water/n-octanol: <0.002
Solubility in H₂O	
Formetanate hydrochloride	82.2 g/100 ml
Vapor Pressure	
Formetanate hydrochloride	3.7 x 10 ⁻⁴ Pa @ 25°C (68°F)

10. STABILITY AND REACTIVITY

Stability:	Stable under normal handling and storage conditions described in Section 7.
Hazardous Polymerization:	Will not occur
Conditions to Avoid:	None known
Decomposition Products:	May give off poisonous fumes including hydrogen chloride and oxides of nitrogen.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies

Skin Effects:	Slightly toxic
	Dermal LD ₅₀ (rabbit): >10,000 mg/kg body weight
Acute Oral Effects:	Highly toxic. Fatal if swallowed.
	Oral LD ₅₀ (rat): 15 - 26 mg/kg body weight
Acute Inhalation:	Toxic
	Inhalation LC ₅₀ (rat): 0.15 mg/L air – 4 hours
Eye Contact:	Can be corrosive to eyes, especially under conditions of prolonged contact.
Skin Sensitization:	May be a skin sensitizer.

11. TOXICOLOGICAL INFORMATION (continued)

Mutagenic Potential

Formetanate hydrochloride was not mutagenic or genotoxic when tested in eight mutagenesis systems. These include the Ames gene mutation assay in Salmonella bacteria and seven other assays using cultures from two other bacteria species, yeast, fruit fly, mouse cells, and human Hela cells.

Formetanate hydrochloride was found to be mutagenic in mouse lymphoma cells in both activated and non-activated assays. In a separate cytogenetic study with human lymphocytes, formetanate hydrochloride was found to cause chromosomal damage only in a non-activated system. In an S9-activated assay, no chromosomal effects were seen at any test doses.

It is concluded from the results of these mutagenesis studies that formetanate hydrochloride is not likely to have any mutagenic or genotoxic effect on humans or animals under the normal conditions of use.

Reproductive Hazard Potential

In a two-generation rat reproduction study, formetanate hydrochloride showed no parental or reproductive effects at dietary concentrations of 10 and 50 ppm. Parental toxicity consisting of decreased water intake, decreased body weight gain, and decreased cholinesterase as well as decreased pup weights and pup viability were observed at 250 ppm. The NOEL was therefore considered to be 50 ppm (-4.46 mg/kgbw/day).

Teratogenic (Birth Defects)

No teratogenic effects of formetanate were observed in rats and rabbits given dose levels of 5 mg/kg/day and 30 mg/kg/day, respectively, during gestation.

Chronic/Subchronic Toxicity Studies

Formetanate hydrochloride showed no adverse effects in rats and dogs receiving dietary dose levels up to 200 ppm for two years. Results from 90-day animal studies suggest no target organ effects are likely under the conditions of normal handling and use.

Neurotoxicity

No neurotoxicological symptoms were observed in hens administered 21.5 mg/kg formetanate hydrochloride.

12. ECOLOGICAL INFORMATION

Environmental Hazards

This pesticide is toxic to wildlife. For terrestrial uses, do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Cover or incorporate spills. This product is toxic to bees exposed to direct treatment. Do not apply this product while bees are actively visiting the treatment area. Do not allow animals to graze in orchard areas treated with Carzol SP.

13. DISPOSAL CONSIDERATION

Proper Pesticide Disposal

Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Pesticide wastes are acutely hazardous. 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

Open outer pouch and place soluble bag into application equipment. Then dispose of empty outer pouch in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. **DO NOT REUSE EMPTY CONTAINERS.**

14. TRANSPORT INFORMATION

DOT Classification

UN 2757, Carbamate Pesticide, Solid, Toxic, 6.1, PGII

International Maritime Organization

UN 2757, Carbamate Pesticide, Solid, Toxic, (contains formetanate hydrochloride 92%), 6.1, PGII, Marine Pollutant

International Civil Aviation Organization

UN 2757, Carbamate Pesticide, Solid, Toxic, (contains formetanate hydrochloride), 6.1, PGII

15. REGULATORY INFORMATION

SARA Title III Classification

Section 302/304: Formetanate Hydrochloride
Section 311/312: Immediate (Acute) Health Hazard
Section 313 chemical(s): Not Applicable
Threshold Planning Quantity (TPQ): 500/10,000 lbs. (Formetanate Hydrochloride)

Proposition 65

Not Applicable

CERCLA Reportable Quantity (RQ)

Not Applicable.

RCRA Classification

RCRA Code P198

TSCA Status

Exempt from TSCA

16. OTHER INFORMATION

NFPA Hazard Ratings

Health:	4	0	Least
Flammability:	1	1	Slight
Reactivity:	0	2	Moderate
		3	High
		4	Severe

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.

Prepared By:

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