



MATERIAL SAFETY DATA SHEET

Carzol SP

Product:

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 CHEMTREC²:

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

For MEDICAL Emergency:

1. CHEMICAL IDENTIFICATION

Product: Carzol SP
EPA Signal Word: Danger-Poison
Active Ingredient: Formetanate hydrochloride (92.0%)
Chemical Name: N, N-dimethyl-N'[[3-[[[(methylamino) carbonyl]oxy]phenyl]methanimidamide monohydrochloride
Chemical Class: N-methyl carbamate

EPA Registration No.: 10163-265
CAS No.: 23422-53-9

2. 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
Manufacturing Impurities (8.0%)	Not established	Not established	Not established	No

3. 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

4. FIRST AID MEASURES

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.

- Ingestion:** Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person. Get medical attention.
- Skin Contact:** Wash immediately with soap and water.
- Eye Contact:** Flush with water for at least 15 minutes and get medical attention.
- Inhalation:** Remove victim to fresh air. If not breathing, give artificial respiration. Administer oxygen if necessary. Get medical attention.

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

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

International Maritime Organization

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

International Civil Aviation Organization

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

Gowan Company
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