

1 Identification

· Product identifier

· Trade name: Carzol® SP Insecticide

· Article number: US23294

· CAS Number:

EPA Registration No.: 10163-265

Active Ingredient: Formetanate hydrochloride (92.0%), CAS:23422-53-9

· Application of the substance / the mixture Agricultural insecticide

· Details of the supplier of the safety data sheet

· Manufacturer/Supplier:

Gowan Company, LLC.

P.O. Box 5569

Yuma, Arizona 85366-5569

(928) 783-8844

· Information department: sds@gowanco.com

· Emergency telephone number:

Chemtrec® Emergency Telephone 24 - Hours: (Spills, leak or fire) Inside U.S. & Canada: (800) 424-9300

Outside the U.S. & Canada: +011 (703) 527-3887

For medical emergency (ProPharma Group®): (888) 478-0798

2 Hazard(s) identification

· Classification of the substance or mixture



GHS06 Skull and crossbones

Acute Toxicity - Oral 2 H300 Fatal if swallowed.



GHS09 Environment

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

· Label elements

· GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms



GHS06 GHS09

· Signal word Danger

· Hazard-determining components of labeling:

formetanate hydrochloride

· Hazard statements

H300 Fatal if swallowed.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

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- **Precautionary statements**

- P264 Wash thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P273 Avoid release to the environment.
- P301+P310 If swallowed: Immediately call a poison center/doctor.
- P321 Specific treatment (see on this label).
- P330 Rinse mouth.
- P391 Collect spillage.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Hazard description:**

Fatal if swallowed. May be fatal if inhaled. Harmful if absorbed through skin. Do not breathe dust. Avoid contact with skin, eyes, or clothing.

Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



Health = 4
Fire = 1
Reactivity = 0

HAZARD INDEX:

- 4 Severe Hazard
- 3 Serious Hazard
- 2 Moderate Hazard
- 1 Slight Hazard
- 0 Minimal Hazard

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable in US.
- **vPvB:** Not applicable in US.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**

- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

CAS: 23422-53-9	formetanate hydrochloride	92.0%
	<ul style="list-style-type: none"> ⚠ Acute Toxicity - Oral 2, H300; Acute Toxicity - Inhalation 2, H330; ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠ Sensitization - Skin 1, H317 	

4 First-aid measures

- **Description of first aid measures**

- **General information:**

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.

- **After inhalation:**

- 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.

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- Call poison control center or doctor for further treatment advice.
- **After skin contact:**
 - 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.
- **After eye contact:**
 - Hold eye open and rinse slowly and gently with water for 15-20 minutes.
 - Remove contact lenses, if present, after first 5 minutes, then continue rinsing eyes.
 - Call a poison control center or doctor for treatment advice.
- **After swallowing:**
 - 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 do so by a poison control center or doctor.
 - Do not give anything by mouth to an unconscious person.
- **Information for doctor:**
 - **Most important symptoms and effects, both acute and delayed** Unknown
 - **Indication of any immediate medical attention and special treatment needed**
Carzol SP is a carbamate, which acts as a cholinesterase inhibitor. Specific antidote – Atropine. Do not use 2-PAM.

5 Fire-fighting measures

- **Extinguishing media**
 - **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**
Hydrogen chloride (HCl)
Nitrogen oxides (NO_x)
- **Advice for firefighters** Dispersion of fine dust in the air may form an explosion mixture
 - **Protective equipment:** Wear self-contained respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Fatal if swallowed. May be fatal if inhaled. Harmful if absorbed through skin. Do not breathe dust. Avoid contact with skin, eyes, or clothing.
Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Pick up mechanically.
Dispose contaminated material as waste according to item 13.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

· **PAC-1:**

All components have the value 0.12 mg/m³.

· **PAC-2:**

All components have the value 1.3 mg/m³.

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· PAC-3:

All components have the value 7.9 mg/m³.

7 Handling and storage

· Handling:

· Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Keep receptacle tightly sealed.

Thorough dedusting.

Fatal if swallowed. May be fatal if inhaled. Harmful if absorbed through skin. Do not breathe dust. Avoid contact with skin, eyes, or clothing.

Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

· Information about protection against explosions and fires: Keep ignition sources away - Do not smoke.

· Conditions for safe storage, including any incompatibilities

· Storage:

· Requirements to be met by storerooms and receptacles: Store in a cool, dry place.

· Information about storage in one common storage facility: Store away from foodstuffs.

· Further information about storage conditions: Keep receptacle tightly sealed.

· Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.

· Control parameters

· Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· Additional information: The lists that were valid during the creation were used as basis.

· Exposure controls

· Personal protective equipment:

· General protective and hygienic measures:

· Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

· Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

· Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

· Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

a dust/mist filter with MSHA/NIOSH approval number prefix TC-21C or a NIOSH approved respirator with any N, R, P or HE filter.

· Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

· Material of gloves Chemical-resistant gloves.

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- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Safety glasses

- **Body protection:**

Mixers, Loaders, Applicators, Flaggers and Other Handlers Must Wear:

- Long-sleeved shirt and long pants,
- Shoes plus socks,
- Chemical-resistant gloves and apron for mixers and other handlers exposed to the concentrate
- Applicators using groundboom must wear a NIOSH-approved respirator with:
 - a dust/mist filter with MSHA/NIOSH approval number prefix TC-21C or
 - any N, R, P, or HE filter. N designation for respirator filters does not apply when application is made with oils.

See Engineering Controls for Additional Requirements.

Applicators Involved in Airblast Applications Must Wear:

- Coveralls worn over long-sleeved shirt and long pants
- Chemical resistant 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 R, P or HE filter).

User Safety Requirements: 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 exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

- **Form:** Crystals
- **Color:** White
- **Odor:** Odorless
- **Odor threshold:** Not determined.

- **pH-value:** Not applicable.

- **Change in condition**

- **Melting point/Melting range:** Undetermined.
- **Boiling point/Boiling range:** Undetermined.

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Not determined.

- **Decomposition temperature:** Not determined.

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· Auto igniting:	Product is not self-igniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
· Lower:	Not determined.
· Upper:	Not determined.
· Vapor pressure:	Not applicable.
· Density at 20 °C (68 °F):	0.3 g/cm ³ (2.5035 lbs/gal)
· Relative density	Not determined.
· Vapor density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with	
· Water:	Dispersible.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
· Dynamic:	Not applicable.
· Kinematic:	Not applicable.
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability** Stable under normal conditions
 - **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:**
 - Hydrogen chloride (HCl)
 - Nitrogen oxides (NOx)

11 Toxicological information

- **Information on toxicological effects**
 - **Acute toxicity:**

· LD/LC50 values that are relevant for classification:		
Oral	LD50	15-26 mg/kg (rat)
Dermal	LD50	>10,000 mg/kg (rabbit)
Inhalative	LC50/4 h	0.15 mg/l (rat)

- **Primary irritant effect:**
 - **on the skin:** Slightly irritating
 - **on the eye:** Can be corrosive under conditions of prolonged contact.
- **Sensitization:** May be a skin sensitizer
- **Other information (about experimental toxicology):**
 - 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

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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 (\div 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.

· Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:

Very toxic

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

None of the ingredients are listed.

· NTP (National Toxicology Program)

None of the ingredients are listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients are listed.

12 Ecological information

· Toxicity

This product is toxic to aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

This chemical can contaminate surface water through spray applications. Under some conditions, it may also have a potential for runoff into surface water after application.

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 treated orchard areas.

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- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
 - **Bioaccumulative potential** No further relevant information available.
 - **Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
 - **Remark:** Toxic for fish
- **Additional ecological information:**
 - **General notes:**
 - Do not allow product to reach ground water, water course or sewage system, even in small quantities.
 - Danger to drinking water if even extremely small quantities leak into the ground.
 - Also poisonous for fish and plankton in water bodies.
 - Very toxic for aquatic organisms
- **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
 - **Recommendation:**

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.
- **Uncleaned packagings:**
 - **Recommendation:**

Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available or, dispose of empty outer pouch in trash as long as WSP is unbroken.

14 Transport information

- | | |
|--|--|
| <ul style="list-style-type: none"> · UN-Number · DOT, ADR, IMDG, IATA | <p>UN2757</p> |
| <ul style="list-style-type: none"> · UN proper shipping name · DOT · ADR · IMDG · IATA | <p>Carbamate pesticides, solid, toxic (formetanate hydrochloride)
 2757 CARBAMATE PESTICIDE, SOLID, TOXIC (formetanate hydrochloride), ENVIRONMENTALLY HAZARDOUS
 CARBAMATE PESTICIDE, SOLID, TOXIC (formetanate hydrochloride), MARINE POLLUTANT
 CARBAMATE PESTICIDE, SOLID, TOXIC (formetanate hydrochloride)</p> |

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· **Transport hazard class(es)**· **DOT**

- **Class** 6.1 Toxic substances
- **Label** 6.1

· **ADR, IMDG**

- **Class** 6.1 Toxic substances
- **Label** 6.1

· **IATA**

- **Class** 6.1 Toxic substances
- **Label** 6.1

· **Packing group**

- **DOT, ADR, IMDG, IATA** II

· **Environmental hazards:** Product contains environmentally hazardous substances: formetanate hydrochloride

· **Marine pollutant:** Yes
Symbol (fish and tree)

· **Special marking (ADR):** Symbol (fish and tree)

· **Special precautions for user** Warning: Toxic substances

- **Hazard identification number (Kemler code):** 60
- **EMS Number:** F-A,S-A
- **Stowage Category** A
- **Stowage Code** SW2 Clear of living quarters.

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable

· **Transport/Additional information:**· **DOT**

- **Quantity limitations** On passenger aircraft/rail: 25 kg
On cargo aircraft only: 100 kg

· **ADR**

- **Excepted quantities (EQ)** Code: E4
Maximum net quantity per inner packaging: 1 g
Maximum net quantity per outer packaging: 500 g

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· **IMDG**· **Limited quantities (LQ)**

500 g

· **Excepted quantities (EQ)**

Code: E4

Maximum net quantity per inner packaging: 1 g

Maximum net quantity per outer packaging: 500 g

· **UN "Model Regulation":**

UN 2757 CARBAMATE PESTICIDE, SOLID, TOXIC (FORMETANATE HYDROCHLORIDE), 6.1, II, ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

EPA /FIFRA Information:

This chemical is a pesticide product registered by the Environmental Protection Agency (EPA) and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals.

· **Marketing authorization number:**· **SARA Title III**· **Section 355 (extremely hazardous substances):**

All ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

· **TSCA (Toxic Substances Control Act):**

All components have the value ACTIVE.

· **Hazardous Air Pollutants**

None of the ingredients are listed.

· **Proposition 65**· **Chemicals known to cause cancer:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **Carcinogenicity categories**· **EPA (Environmental Protection Agency)**

None of the ingredients are listed.

· **TLV (Threshold Limit Value)**

None of the ingredients are listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients are listed.

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

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· **Hazard pictograms**

Not applicable

· **Signal word**

(US EPA) DANGER - POISON

· **Hazard-determining components of labeling:**

formetanate hydrochloride

· **Hazard statements**

H300 Fatal if swallowed.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

· **Precautionary statements**

Fatal if swallowed. May be fatal if inhaled. Harmful if absorbed through skin. Do not breathe dust. Avoid contact with skin, eyes, or clothing.

Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P273 Avoid release to the environment.

P301+P310 If swallowed: Immediately call a poison center/doctor.

P321 Specific treatment (see on this label).

P330 Rinse mouth.

P391 Collect spillage.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Systems Design and Control

· **Contact:** sds@gowanco.com

· **Date of preparation / last revision** 09/21/2022

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

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*TLV: Threshold Limit Value**PEL: Permissible Exposure Limit**REL: Recommended Exposure Limit**Acute Toxicity - Oral 2: Acute toxicity – Category 2**Sensitization - Skin 1: Skin sensitisation – Category 1**Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1**Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1**· Sources Carzol® is a registered trademark used under license by Gowan Company, L.L.C.*

US