

## SAFETY DATA SHEET

### 1. Identification of the substance or preparation and the company/undertaking

**Name of preparation:** Dicarzol<sup>®</sup> 20SP  
**Use:** Agricultural insecticide  
**Company identification:** Gowan Comércio Internacional e Serviços, Limitada  
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 PT 511 172 400  
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 Telephone (24 hour emergency) +44 (0) 1865 407333

### 2. Composition/information on ingredients

**Ingredients with health or environmental hazards:**

<i>Ingredient</i>	<i>CAS No.</i>	<i>EC No.</i>	<i>%w/w</i>	<i>Symbol-letter(s)</i>	<i>Risk phrase(s)*</i>
Formetanate hydrochloride	23422-53-9	245-656-0	23.3	T+, N†	R26/28, 43, 50/53†
Ammonium chloride	12125-02-9	235-186-4	70	Xn	R22, 36

\*See Section 16 for risk phrase text

†See Section 16

**Other ingredients:** Inerts.

### 3. Hazards identification



**Toxic**



**Dangerous for the environment**

**Health hazards:**

Toxic by inhalation and if swallowed. Harmful: danger of serious damage to health by prolonged exposure if swallowed (but not classified as such – see Section 16). Causes skin sensitisation. Irritating to eyes.

**Environmental hazards:**

Very toxic to aquatic organisms. May cause long-term adverse effects to the aquatic environment.

**Fire hazards:**

Combustible, may give off ammonium compounds and cyanides if burnt or heated to decomposition.

#### 4. First-aid measures

<b><i>Inhalation:</i></b>	Toxic. Remove patient from exposure into fresh air, and keep at rest. Obtain immediate medical aid (see 'Advice to physician' below for symptoms and treatment).
<b><i>Eye contact:</i></b>	Irritating. Irrigate eyes with eyewash solution or clean water, holding the eyelids apart, for at least fifteen minutes (do not let run-off water contaminate unaffected eye). Blurred vision may be experienced as a result of inhaling or ingesting the material. Obtain immediate medical aid.
<b><i>Skin contact:</i></b>	Remove contaminated clothing and wash affected area thoroughly with soap and water. Report for medical attention.
<b><i>Ingestion:</i></b>	Toxic. Do not induce vomiting. Give patient plenty of water to drink if conscious, keep warm and at rest. If unconscious, place/transport patient in secured side recovery position. Obtain immediate medical aid (see 'Advice to physician' below for symptoms and treatment).
<b><i>Advice to physician:</i></b>	Exposure is most likely to be by inhalation or ingestion. Formetanate is a short-term cholinesterase inhibitor. Symptoms can include lacrimation, salivation, diarrhoea, bronchospasm, coughing, dyspnoea, vomiting, colic, incontinence, myosis, depression, weakness, paralysis, prostration, coma and convulsions. Antidote is atropine; oximes (eg pralidoxime) are ineffective. Monitor respiratory, CNS and cardiac functions. If necessary apply anticonvulsant therapy with diazepam i.v. If ingested, gastric irrigation with added activated charcoal is advised. Oxygen may need to be administered if respiratory difficulties occur.

#### 5. Fire-fighting measures

<b><i>Fire hazard:</i></b>	Product contains a large amount of non-combustible material but packaging is combustible.
<b><i>Extinguishing media:</i></b>	Fight fire with extinguishants appropriate to other flammable/combustible chemicals involved. If no other chemicals involved (ie fire is due to burning packaging), extinguish with water spray or fog. Remove undamaged packages from exposure to fire, if without risk of personal exposure to fire or chemical.
<b><i>Exposure hazards:</i></b>	Product may decompose in a fire to release toxic fumes (including ammonium compounds and cyanides).
<b><i>Protective equipment:</i></b>	Wear chemical-resistant protective clothing and self-contained breathing apparatus.
<b><i>Note:</i></b>	Prevent run-off water contaminating drains or watercourses (bund if necessary); inform appropriate authority immediately if this happens.

## 6. Accidental release measures

<b>Personal precautions:</b>	Ensure adequate ventilation (see Section 8 if this is not possible). Avoid contamination with chemical; wear personal protective equipment (see Section 8). Keep people and animals away.
<b>Environmental precautions:</b>	Prevent chemical contaminating drains or watercourses; inform appropriate authority immediately if this happens. Prevent chemical contaminating soil.
<b>Clean-up measures:</b>	Vacuum up (using industrial equipment fitted with high efficiency final filter) or shovel/sweep up; transfer into suitable drums for safe disposal (see Section 13). Prevent formation of dust cloud; dampen powder if necessary with water. Subsequently, wash affected surfaces with water (contain washings to prevent contamination of drains or watercourses).

## 7. Handling and storage

<b>Handling:</b>	Ensure appropriate measures (eg engineering controls and/or personal protective equipment) are in place to minimise exposure – see Section 8. Avoid contact with skin or eyes. Avoid inhaling dust.
<b>Storage:</b>	Store in a secure, cool, dry, designated area in original packaging, in accordance with any label storage advice. Keep children and public away. Rotate stock and check regularly for damage.

## 8. Exposure controls and personal protection

Refer to workplace risk assessment and exposure control measures. Exposure should be minimised by the use of appropriate containment, engineering control and ventilation measures. Where this is not possible, personal protective equipment should be worn as indicated below (in circumstances where the likelihood of exposure is minimal, eg very small spillage in a well ventilated area, some of the personal protective equipment described may not be appropriate – consult a specialist before disregarding).

<b>Occupational exposure standards:</b>	None specified for product. OEL for ammonium chloride 10 mg/m <sup>3</sup> (8 hr.), 20 mg/m <sup>3</sup> (15 min.).
<b>Respiratory protection:</b>	Wear dust mask (EN149 Type P3). In an emergency where significant exposure is possible wear self contained breathing apparatus.
<b>Eye protection:</b>	Wear goggles with side pieces.
<b>Hand protection:</b>	Wear pvc, rubber, neoprene or nitrile gloves. Check regularly for condition when using.
<b>Skin protection:</b>	Wear chemical-resistant overalls (disposable, or clean reusable), rubber or pvc apron and rubber or pvc boots.
<b>General hygiene:</b>	Wash after handling chemical or immediately if contamination occurs. Do not eat, drink or smoke. Decontaminate personal protective equipment before removal; if not possible, dispose of as contaminated waste.

## 9. Physical and chemical properties

<b>Appearance:</b>	Yellow-pink powder	<b>Odour:</b>	None
<b>Density (bulk):</b>	714 kg/m <sup>3</sup>	<b>Density (loose)</b>	No data
<b>Melting point:</b>	No data	<b>Boiling point:</b>	Not applicable
<b>Log Po/w</b>	No data	<b>pH:</b>	3-4.5 (10% aq. soln.)
<b>Solubility in water:</b>	Soluble	<b>Oxidising potential:</b>	No data (but unlikely)
<b>Vapour pressure:</b>	No data	<b>Combustibility:</b>	Not combustible
<b>Flash point:</b>	Not combustible	<b>Autoignition temp.:</b>	Not combustible
<b>Flammability in air:</b>	Not combustible	<b>Explosive potential†:</b>	Not explosive
<b>Min. ignition energy:</b>	No data	<b>St Class:</b>	No data

†inherent property of bulk material.

## 10. Stability and reactivity

**Conditions to avoid:** Stable under normal conditions of storage and use (see Section 7).

**Materials to avoid:** Oxidising agents, acids, alkalis.

**Hazardous decomposition products:** None known. See Section 5 for thermal decomposition products.

## 11. Toxicological information

**Inhalation:** Toxic if inhaled: rat inhalational LC50 0.64 mg/l (4 hour). See below for symptoms.

**Eye contact:** Irritating†.

**Skin contact:** Low acute toxicity: rabbit dermal LD50 >4000 mg/kg. May cause sensitisation†.

**Ingestion:** Toxic if swallowed: rat oral LD50 96 mg/kg. See below for symptoms.

**Sub-chronic toxicity:** Harmful: danger of serious damage to health by prolonged exposure if swallowed.\*

**Chronic toxicity:** The ingredients of this preparation are not classified by their suppliers as carcinogenic, mutagenic or toxic for reproduction under EU rules.

**Symptoms of exposure:** Exposure is most likely by inhalation or ingestion. Formetanate is a short-term cholinesterase inhibitor. Symptoms can include lacrimation, salivation, diarrhoea, bronchospasm, coughing, dyspnoea, vomiting, colic, incontinence, myosis, depression, weakness, paralysis, prostration, coma and convulsions.

†Estimated by application of EU Conventional Method criteria.

\*See Section 16

## 12. Ecological information

**Aquatic toxicity:** Very toxic to aquatic organisms.\* For formetanate hydrochloride, fish (rainbow trout) LC50 (96 hour) 2.8 - 4.4 mg/l; daphnia EC50 (48 hour) 0.093 mg/l; algae IC50 (72 hour) 1.3 mg/l. No data on bioaccumulation potential.

**Avarian toxicity:** No data.

**Toxicity to honey bees:** No data.

## 12. Ecological information - continued

<b>Mobility:</b>	No data.
<b>Persistence/degradability:</b>	May cause long-term adverse effects to the aquatic environment*†.

\*Estimated by application of EU Conventional Method criteria.

†See Section 16.

## 13. Disposal considerations

This material should be disposed of at a licensed facility for disposal in accordance with local and national legislation. Preferred means of disposal is incineration (at >1100°C with minimum residence time of 3 seconds) with off-gas scrubbing where permitted.

Uncontaminated packaging may be recycled or incinerated as appropriate in accordance with local and national legislation.

Relevant legislation includes: (EU) The Waste Framework Directive (75/442/EEC), the Hazardous Waste Directive (91/689/EEC).

## 14. Transport information

Except where shown otherwise in this table, IATA, IMDG, ADR, RID and GB transport particulars are as for UN.

<b>UN proper shipping name:</b>	CARBAMATE PESTICIDE, SOLID, TOXIC (contains formetanate hydrochloride 23%)	<b>UN class:</b>	6.1
<b>UN number:</b>	2757	<b>UN label:</b>	No. 6.1
<b>UN packing group:</b>	II	<b>ADR transport category:</b>	2
<b>ADR classification code:</b>	T7	<b>CDG-road emergency action code:</b>	2X
<b>ADR hazard identification number:</b>	60		
<b>IMDG marine pollutant:</b>	Yes, Type P		

## 15. Regulatory information

EU classification/labelling particulars:

Note: Individual EU Member States may require these particulars to be modified as the classification and labelling of pesticides has not yet been fully harmonised; check national approval conditions before use.

<b>Designated name:</b>	Dicarzol 20 SP (contains formetanate and ammonium chloride)
<b>Categories of danger:</b>	Toxic. Irritant. Sensitising. Dangerous for the environment.
<b>Symbol-letter(s):</b>	T. N.
<b>Risk phrase(s)*:</b>	R23/25, 36, 43, 50/53**
<b>Safety phrase(s)*:</b>	S24, 37, 38, 45, 60, 61
<b>Precautionary phrases†*:</b>	

\*See Section 16 for risk and safety phrase text. \*\* See Section 16 for notes on this classification. †Required by Member State pesticide approval authority instead of standard EU safety phrases on consumer packages.

## 16. Other information

This safety data sheet has been prepared in accordance with: (EU) EC Directive 91/155/EEC.

### ***Risk and safety phrases used in this safety data sheet (Sections 2, 3, 15 and note below):***

R22 = Harmful if swallowed. R26/28 = Very toxic by inhalation and if swallowed. R36 = Irritating to eyes. R43 = May cause sensitisation by skin contact. R50 = Very toxic to aquatic organisms. R50/53 = Very toxic to aquatic organisms; may cause long-term adverse effects to the aquatic environment. S24 = Avoid contact with skin. S37 = Wear suitable gloves. S38 = In case of insufficient ventilation wear suitable respiratory protection. S45 = In case of accident or if you feel unwell seek medical advice immediately (show the label where possible). S60 = This material and its container must be disposed of as hazardous waste. S61 = Avoid release to the environment. Refer to special instructions / safety data sheet.

### ***Classification of formetanate hydrochloride and its formulations:***

Sections 3 and 11 of this safety data sheet warn of possible R48/22 health effects; this is because studies on formetanate hydrochloride show it to have this property and it is therefore likely in reality that its formulations have this property too.

Annex I of 67/548/EEC however does not include R48/22 in the classification of formetanate hydrochloride; industry's recently submitted proposal to amend it has not yet been accepted so the current Annex I classification remains obligatory. In addition, because (in the absence of data from studies) formulations containing formetanate hydrochloride must be classified by the Conventional Method using the Annex I classification, the formulations are also not classified as R48/22. Consequently, Sections 2 and 15 do not show R48/22.

A very similar situation exists with R53, where industry studies indicate that formetanate hydrochloride is not R53 nor should be its formulations; Annex I currently requires R53 for the substance, therefore the Conventional Method requires R53 for its formulations. Consequently, Sections 2 and 15 of this safety data sheet show R53.

### ***Sources of information used include:***

Own data; ingredient suppliers' data; Annex I (list of substances with mandatory classification and labelling particulars) of The Dangerous Substances Directive 67/548/EEC as amended; transport rules; toxicity reports.

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