SAFETY DATA SHEET (SDS)	
TITLE:	CADUSAFOS 100 GR

1.0 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY / UNDERTAKING

1.1 Product Identifier

Identification on the label / Trade name	:	AG CADUSAFOS 100 GR
Common Name	:	Cadusafos 100 g/kg GR
CAS No.	:	95465-99-9
EC No.	:	N/A
Index Number	:	N/A
REACH registration No.	:	N/A

1.2 Relevant identified uses of the substance and uses advised against:

Agricultural Nematicide Insecticide

1.3 Details of the Manufacturer / Supplier of the safety data sheet:

Supplier	AGROMEC SARL P.O.Box: 462 Jounieh, Lebanon
Tel	+961 9 226874
E-mail	agromec@agromec-international.com
Webpage	www.agromec-international.com

1.4 Emergency Phone Number (24 hours)

+961 3 980599

2.0 HAZARDS IDENTIFICATION

2.1 Classification of the mixture:

2.1.1 Classification:

The substance is classified as following according to 67/548/EEC and REGULATION (EC) No 1272/2008 (CLP).

1272/2008/EU

Pictograms / Signal word code (s)	Hazard Statement Code (s)
GHS07, GHS09	H332, H312, H302, H332, H373, H400, 9273, P102, P401

For full text of H-phrases: see section 2.2.1

67/548/EEC (DSD)		
Classification and Indication of Danger (s)	**R-Phrases**	**S-Phrases**
Xn, N	R20/21/22-48-50/53	S2-8-13-61

For full text of R-phrases and S-phrases: see section 2.2.2

2.2 Label elements

2.2.1 According to 1272/2008/EU REGULATION

Pictograms / Signal word code (s)

GHS07

GHS09

Hazard Statement Code(s)

H332	:	Harmful if inhaled.
H312	:	Harmful in contact with skin.
H302	:	Harmful if swallowed.
H332	:	Harmful if inhaled.
H373	:	May cause damage to organs through prolonged or repeated exposure
H400	:	Very toxic to aquatic life
P273	:	Avoid release to the environment
P102	:	Keep out of reach of children
P401	:	Store away from food, drink and animal feeding stuff

2.2.2 According to 67/548/EEC REGULATION

Hazard Symbol:

Xn- Harmful

N-Dangerous for the Environment

R-Risk Phrases:

R20	:	Harmful by inhalation, in contact with skin and if swallowed
R48	:	Danger of serious damage to health by prolonged exposure

R50/53 : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S- Safety Phrases: :

S2 : Keep out of the reach of children

S8 : Keep container dry

S13 : Keep away from food, drink and animal feeding stuffs

S61 : Avoid release to the environment. Refer to special instructions/safety data sheet

2.3 Other hazards

Specific concentration Limits and M factors: Not available

3.0 COMPOSITION/INFORMATION ON INGREDIENTS

Substance Name / CAS No	% w/w	Risk and Safety Phrases (67/548/EEC)	Hazard Symbols (67/548/EEC)	Hazard Pictograms (1272/2008/EC)	Hazard Statements (1272/2008/EC)
Cadusafos/ 95465-99-9	10,0	R26/27-25-50-53 S1/2-13-36/37-45/63	T+, T, N	**GHS06, GHS09**	**H311,H331,H301 ,H400,H413**
Silica,Quartz/ 14808-60-7	80-85	R48/20 S22-38	Xn	GHS08	H373
Diethylene Glycol/111-46-6	1-5	R22 S1-23-35-45-46	Xn	GHS07, GHS08	H302, H373

4.0 FIRST AID MEASURES

4.1 Description of first aid measures

4.1.1 General information

4.1.2 In case of inhalation

Remove to fresh air. If breathing difficulty or discomfort occurs and persists, see a medical doctor. If breathing has stopped, give artificial respiration and see a medical doctor immediately.

4.1.3 In case of skin contact

Immediately flush with plenty of water while removing contaminated clothing and/or shoes, and thoroughly wash with soap and water. See a medical doctor immediately**.**

4.1.4 In case of eyes contact

Flush with water for at least 15 minutes. If irritation occurs and persists, obtain medical attention

4.1.5 In case of ingestion

Drink 1 or 2 glasses of water and induce vomiting by touching the back of the throat with a finger or by giving syrup of ipecac. Never induce vomiting or give anything by mouth to an unconscious person. Contact a medical doctor.

4.1.6 Notes for the doctor

This product is highly toxic if absorbed through the skin and moderately toxic if swallowed. It is practically non-irritating to the eyes and non-irritating to the skin. This product contains a granular material (clay) that may cause mechanical irritation to the eyes. Atropine sulfate is antidotal. Support respiration as needed with removal of secretions, maintenance of a patent airway and, if necessary, artificial ventilation.

If cyanosis is absent: Adults – start treatment by giving 2 mg atropine intravenously or intramuscularly, if necessary, and repeat with 0.4 - 2.0 mg atropine at 15 minute intervals until atropinization occurs (tachycardia, flushed skin, dry mouth, mydrasis); Children under 12 - initial dose = 0.05 mg/kg body weight and repeat dose = 0.02 - 0.05 mg/kg body weight. Start 2-PAM (Protopam®, Ayerst®) at the same time, following manufacturer's recommended dosages and administration. Morphine, reserpine, phenothiazines and theophylline are probably contraindicated. At first sign of pulmonary edema, the patient should be given supplemental oxygen and treated symptomatically. Observe patient to insure that these symptoms do not recur as atropinization wears off. If in eyes, instill one drop of homatropine. Treatment is otherwise controlled removal of exposure followed by symptomatic and supportive care. Some individuals have a genetically determined low level of plasma pseudocholinesterase. These persons are particularly vulnerable to the action of the muscle-paralyzing drug succinylcholine, often administered to surgical patients. They may be unusually sensitive to organophosphate toxicity; this has not yet been proven. Patients with advanced liver disease, malnutrition, chronic alcoholism and dermatomyositis exhibit low plasma cholinesterase activities. Some cholinesterase depression may occur during early stages of pregnancy or with use of birth control pills.

5.0 FIRE – FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media	:	Foam, CO2 or dry chemical. Soft stream water fog only if necessary. Contain all runoff.
Unsuitable extinguishing media	:	N/A

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products	:	Carbon monoxide, carbon dioxide, sulfur dioxide and phosphorus pentoxide.

5.3 Advice for fire-fighters

Isolate fire area. Evacuate downwind. Wear full protective clothing and self-contained breathing apparatus. Do not breathe smoke, gases or vapors generated.

5.4 Additional information

Slightly combustible. This material may support combustion at elevated temperatures

6.0 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

Protective equipment	:	Wear protective clothing and personal protective equipment as prescribed in Section 8.

Emergency procedures	:	For dry material, use a wet sweeping compound or water to prevent the formation of dust. If water is used, prevent runoff or dispersion of excess liquid by diking and absorbing with a non-combustible absorbent such as clay, sand or soil. Vacuum, shovel or pump all waste material, including absorbent, into a drum and label contents for disposal.

6.1.2 For emergency responders

Personal protective equipments	:	See section 8.

6.2 Environmental precautions

See section 7.1.1.

6.3 Methods and material for containment and cleaning up

6.3.1 For containment

See section 7.2.

6.3.2 For cleaning up

To clean and neutralize spill area, tools and equipment, wash with a solution of soap and water and add the solution to the drums of waste already collected Dispose of drummed waste according to the method outlined in Section 13, "Disposal Considerations".

6.3.3 Other information

Isolate and post spill area. Keep unprotected persons and animals out of the area. Keep material out of lakes, streams, ponds and sewer drains. Large spills should be covered to prevent dispersal.

6.4 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 information on disposal.

6.5 Additional information

N/A

7.0 HANDLING AND STORAGE

7.1 Precautions for safe handling

7.1.1 Protective measures

Fire preventions	:	Do not use or store near heat, open flame or hot surfaces
Aerosol and dust generation preventions	:	Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.
Environmental precautions	:	Do not wash into sewers or into any body of water. Advise water authority if spillage has entered water course or drainage system.

7.1.2 Advice on general occupational by hygiene

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions	:	Store in a cool, dry, well-ventilated place.
Packaging materials	:	Store in original containers only
Requirements for storage rooms and vessels	:	N/A
Hints on storage assembly	:	N/A
Further information on storage conditions	:	Do not store near food, drink, animal feeding stuffs, pharmaceuticals, cosmetics or fertilisers. Keep out of reach of children.

7.3 Specific and use(s

Recommendations	:	Keep out of reach of children and animals.
Industrial sector specific solutions	:	N/A

8.0 EXPOSURE CONTROL/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Occupational exposure limits: Not available

8.1.2 Additional exposure limits under the conditions of use: Not available

8.1.3 DNEL/DMEL and PNEC-Values: Not available.

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Use local exhaust at all process locations where dust may be emitted. Ventilate all transport vehicles prior to unloading.

8.2.2 Personal protection equipment

Depending upon concentrations encountered, wear coveralls or long-sleeved uniform and head covering. For larger exposures as in the case of spills, wear full body cover barrier suit, such as a PVC suit. Leather items - such as shoes, belts and watchbands - that become contaminated should be removed and destroyed. Launder all work clothing before reuse (separately from household laundry).

8.2.3 Eye / Face protection

For dust exposure, wear chemical protective goggles or a face shield.

8.2.4 Skin Protection

Wear chemical protective gloves made of materials such as nitrile or Viton® brand. Thoroughly wash the outside of gloves with soap and water prior to removal. Inspect regularly for leaks

8.2.5 Respiratory protection

For dust exposure wear, as a minimum, a properly fitted half-face or full-face air-purifying respirator which is approved for pesticides (U.S. NIOSH/MSHA, EU CEN or comparable certification organization). Respirator use and selection must be based on airborne concentrations.

9.0 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	:	Amorphous solid granules
Colour	:	Light grey to dark grey
Odour	:	Mercaptan
Odour threshold	:	N/A
pH	:	4,0-7,0
Melting point/rang (^{o}C)	:	275-280
Boiling point/range (^{o}C, 0.8mmHg)	:	112-114
Flash point (^{o}C)	:	129.4 °C(Cadusafos)
Flammability (solid, gas)	:	Not flammable
Ignition temperature (^{o}C)	:	N/A
Upper/lower flammability/explosive limits	:	N/A
Vapour pressure (^{o}C)	:	N/A
Density (20^{o}C)	:	N/A
Water solubility (g/l)	:	248 mg/ml (Cadusafos)
n-Octanol/Water (log Po/w)	:	3.9(Cadusafos)
Auto-ignition temperature	:	N/A
Decomposition temperature	:	N/A
Viscosity, dynamic (mPa s)	:	N/A

9.2 Other information

Fat solubility (solvent-oil to be specified) etc	:	N/A
Bulk Density	:	800 - 1000 g/L
Dissociation constant in water (pKa)	:	N/A
Oxidation-reduction Potential	:	N/A

10.0 STABILITY AND RELIABILITY

10.1 Reactivity

10.2 Chemical stability

Stable under normal storage conditions.

10.3 Possibility of hazardous reactions

Slightly combustible. May support combustion at elevated temperatures

10.4 Conditions to avoid

Excessive heat and fire.

10.5 Incompatible materials

10.6 Hazardous decomposition products

Carbon monoxide, carbon dioxide, sulfur dioxide and phosphorus pentoxide

11.0 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

• LD50 (Dermal)	:	142 mg/kg (rat)
• LD50 (Oral, Rat)	:	396 mg/kg (rat)
• Inhalation LC50		0.026mg/L/4 hour (rat) (cadusafos)
Skin corrosion/Irritation	:	highly toxic if absorbed through the skin/ non-irritating to the skin
Serious eye damage/irritation	:	non-irritating to the eyes
Sensitization	:	This product produces skin sensitization (allergic reaction) in laboratory animals, and may produce similar effects in humans.
Repeated exposure	:	Excessive exposure may cause organophosphate type cholinesterase inhibition. Dust generated from granule pulverization during shipping and handling may be toxic if inhaled. Repeated overexposure to crystalline silica for extended periods has caused acute silicosis

Other information

Germ cell mutagenicity	:	N/A
Carcinogenicity	:	Not carcinogenic
Reproductive toxicity	:	In studies, cadusafos did not cause reproductive toxicity.
STOT- single exposure	:	N/A
STOT- repeated exposure	:	N/A
Aspiration hazard	:	N/A
STOT- repeated exposure	:	N/A

12.0 ECOLOGICAL INFORMATION

12.1 Toxicity

Unless otherwise indicated, the data presented below are for the active ingredient**.**

12.1.1 Aquatic Toxicity

With LC50 values of 1.6 µg/L to 170 µg/L to fish and aquatic arthropods in the laboratory, cadusafos is considered highly toxic. The aquatic arthropods are more sensitive than the fish. Care should be taken to avoid contamination of the aquatic environment.

12.1.2 Avian Toxicity

Cadusafos is also considered highly toxic to upland game birds (oral LD50 = 16.4 mg/kg, bobwhite quail) and moderately toxic to waterfowl (oral LD50 = 230 mg/kg, mallard).

12.2 Persistence and degradability

N/A

12.3 Mobility in soil

Cadusafos has a half-life in soil of approximately 45 days which varies somewhat by soil type. The hydrolysis half-life of cadusafos is between 29 to 35 days in the pH region of 5 to 9. It is moderately mobile in soil and has a Log Pow of 3.9. This value, in association with a bioconcentration factor of 220, suggests that there will be little potential for bioaccumulation in the environment.

12.4 Result of PBT & vPvB assessment: N/A

12.5 Other adverse effects: N/A

13.0 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

13.2 See section 6.3.2.

13.3 Product / Packaging disposal

13.3.1 Product waste disposal

Open dumping or burning of this material or its packaging is prohibited. If spilled material cannot be disposed of by use according to label instructions, an acceptable method of disposal is to incinerate in accordance with local, state and national environmental laws, rules, standards and regulations. However, because acceptable methods of disposal may vary by location and regulatory requirements may change, the appropriate agencies should be contacted prior to disposal.

13.3.2 Packing waste disposal

Completely empty package into application equipment. Then dispose of empty package in a sanitary landfill or by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

14.0 TRANSPORT INFORMATION

14.1 Land transport (ADR/RID/GGVSE)

UN-No	:	3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (cadusafos)
Class(es)	:	9
Classification Code (s)	:	D7
Packing group	:	III
Hazard label(s)	:	Toxic

14.2 Sea transport (IMDG-Code/GGVSee)

UN-No	:	3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (cadusafos)
Class(es)	:	9
Subsidiary Risks	:	-
Packing group	:	III
Marine Pollutant	:	YES
Label (s)	:	Toxic, MARINE POLLUTANT

14.3 Air transport (ICAO-IATA/DGR)

UN-No	:	3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (cadusafos)
Class(es)	:	9
Packing group	:	II
Label (s)	:	Toxic

15.0 REGULATORY INFORMATION

15.1 Risk and safety phrases in accordance with the Directive 2001/58/EC

Hazard Symbol	See section 2.2.2 and 2.1.1
R-Risk Phrases	See section 2.2.2 and 2.1.1
S- Safety Phrases	See section 2.2.2 and 2.1.1

15.2 Hazard and Precautionary statements in accordance with the regulation 1272/2008/EC

Pictograms and Signal Word Code(s)	See section 2.2.1 and 2.1.1
Hazard Statement Code (s)	See section 2.2.1 and 2.1.1

16.0 OTHER INFORMATION

16.1 Hazard symbols mentioned in section 3 in accordance with the Directive 2001/58/EC

Hazard symbols:

T+


T


N


Xn

16.2 Risk phrases mentioned in section 3 in accordance with the Directive 2001/58/EC:

R26/27	:	Very toxic by inhalation and in contact with skin
R25	:	Toxic if swallowed

R50	:	Very toxic to aquatic organisms
R53	:	May cause long-term adverse effects in the aquatic environment
R22	:	Harmful if swallowed
R48/20	:	Danger of serious damage to health by prolonged exposure through inhalation

16.3 Pictograms / Signal word code (s) mentioned in section 3 in accordance with the regulation 1272/2008/EC

GHS06

GHS07

GHS08

GHS09

16.4 Hazard statements mentioned in section 3 in accordance with the regulation 1272/2008/EC:

H302	:	Harmful if swallowed
H373	:	May cause damage to organs through prolonged or repeated exposure if swallowed/ May cause damage to organs through prolonged or repeated exposure through inhalation
H311	:	Toxic in contact with skin.
H331	:	Toxic if inhaled.
H301	:	Toxic if swallowed
H400	:	Very toxic to aquatic life.
H413	:	May cause long lasting harmful effects to aquatic life

16.5 Further Information

The information contained herein relates only to the specified material identified. AGROMEC, believes that such information is accurate and reliable as of the data of this material safety data sheet, but no representation, guarantee or warranty, expressed or implied, is made as to the accuracy, reliability, or completeness of the information. AGROMEC urges persons receiving this information to make their own determination as to the information's suitability and completeness for their particular application.

This material safety data sheet adopts the provisions of the European Commission Directive 2001/58/EC and Regulations 1272/2008 (CLP) and 453/2010 (REACH).