Material Safety Date Sheet (MSDS)

Carzone 240 EC

IDENTIFICATION OF THE SUPPLIER:

Agro Chemical Industries LTD (ACI)
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PRODUCT IDENTIFICATION:

Common Name: Carfentrazone-ethyl 240 gm/l
Trade Name: Carzone 240 EC
Chemical Name: ethyl α, 2-dichloro-5-[4-(difluoromethyl)-4,5 dihydro-3-methyl-5-oxo-1H-1,2,4-triazol-1-yl] -4 fluorobenzenepropanoate
Chemical Formula: $C_{15}H_{14}Cl_2F_3N_3O_3$
Molecular Weight: 412.2

PRODUCT COMPOSITION:

Active Ingredient:	***g/l***	***CAS #***
Carfentrazone-ethyl	240	[128639-02-1]

Inert ingredient: Up to 1 liter

HAZARD IDENTIFICATION:

Appearance Brown orange liquid
Physical State Liquid
Odor Aromatic
Potential Health Effects
Principal Routes of Exposure Eye Contact, Skin Contact, Inhalation, Ingestion

Acute Effects

Eyes May cause slight irritation.

Skin Substance may cause slight skin irritation.

Inhalation May cause irritation of respiratory tract. May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination.

Ingestion Potential for aspiration if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause central nervous system depression.

Chronic Effects Carfentrazone-ethyl: Long-term exposure caused hematotoxicity and deposit of porphyrin in the liver in animal studies.

FIRST-AID MEASURES:

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 further treatment advice.

Eye Contact Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.

Inhalation Move person to fresh air. If person is not breathing, call 911 (within the U.S. and Canada) or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Ingestion Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not induce vomiting or give anything by mouth to an unconscious person.

Notes to Physician Treatment is symptomatic and supportive. Contains petroleum distillate. Vomiting may cause aspiration pneumonia.

FIRE-FIGHTING MEASURES: -

Suitable Extinguishing Media Water spray. Carbon dioxide (CO2). Foam. Dry powder.

Hazardous Combustion Products None known.

Specific Hazards Arising from the Chemical

Slightly combustible. May support combustion at elevated temperatures.

Protective equipment and precautions for firefighters

Wear self-contained breathing apparatus and protective suit.

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NFPA
Health Hazards 1
Flammability 2
Stability 0
Special Hazards -

ACCIDENTAL RELEASE MEASURES:

Personal Precautions Isolate and post spill area. Remove all sources of ignition. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see section 8.
Environmental Precautions Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains. See Section 12 for additional Ecological Information.
Methods for Containment Dike to prevent runoff. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
Methods for cleaning up Clean and neutralize spill area, tools and equipment by washing with bleach water and soap. Absorb rinsate and add to the collected waste. Waste must be classified and labeled prior to recycling or disposal. Dispose of waste as indicated in Section 13.
Other For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.

PHYSICAL AND CHEMICAL DATA:

Appearance Brown orange liquid
Color Brown orange
Physical State Liquid
Odor Aromatic
pH 5.3 (1% solution)
Boiling Point/Range Not applicable
Flash point 79.9 °C / 168.08 °F Closed cup
Density 9.0 lb/gal
Specific gravity 1.08 @ 20°C
Water solubility No information available

STABILITY AND REACTIVITY DATA:

Stability Stable under recommended storage conditions.
Conditions to Avoid Heat, flames and sparks
Materials to avoid Strong oxidizing agents

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Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO2), Hydrogen chloride, Hydrogen fluoride, Nitrogen oxides (NOx), Sulfur oxides.
Hazardous polymerization Hazardous polymerization does not occur.

EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH	Mexico
2-Methylnaphthalene 91-57-6	S* TWA: 0.5 ppm			
1-Methylnaphthalene 90-12-0	S* TWA: 0.5 ppm			
Naphthalene 91-20-3	S* TWA: 10 ppm	TWA: 10 ppm TWA: 50 mg/m³	IDLH: 250 ppm TWA: 10 ppm TWA: 50 mg/m³ STEL: 15 ppm STEL: 75 mg/m³	Mexico: TWA 10 ppm Mexico: TWA 50 mg/m³ Mexico: STEL 15 ppm Mexico: STEL 75 mg/m³
Chemical name	**British Columbia**	**Quebec**	**Ontario TWAEV**	**Alberta**
2-Methylnaphthalene 91-57-6	TWA: 0.5 ppm Skin		TWA: 0.5 ppm Skin	
1-Methylnaphthalene 90-12-0	TWA: 0.5 ppm Skin		TWA: 0.5 ppm Skin	
Naphthalene 91-20-3	TWA: 10 ppm STEL: 15 ppm Skin	TWA: 10 ppm TWA: 52 mg/m³ STEL: 15 ppm STEL: 79 mg/m³	TWA: 10 ppm STEL: 15 ppm Skin	TWA: 10 ppm TWA: 52 mg/m³ STEL: 15 ppm STEL: 79 mg/m³ Skin

Occupational exposure controls

Engineering measures Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

Personal protective equipment
General information If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers. These recommendations apply to the product as supplied.

Respiratory Protection For dust, splash, mist or spray exposures wear a filtering mask.
Eye/Face Protection For dust, splash, mist or spray exposure, wear chemical protective goggles
Skin and Body Protection Wear long-sleeved shirt, long pants, socks, and shoes.
Hand Protection Protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion and the contact time.
Hygiene measures Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking, chewing gum

or using tobacco. Shower or bathe at the end of working. Remove and wash contaminated clothing before re-use. Launder work clothing separately from regular household laundry.

HANDLING AND STORAGE:

Handling Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.
Storage Keep in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep out of reach of children and animals. Keep/store only in original container.

TOXICOLOGICAL INFORMATION:

Acute toxicity
Signs of toxicity in laboratory animals included mydriasis, cyanosis, ataxia, dyspnea, lacrimation, and diarrhea.
Eye Contact Minimally irritating
Skin Contact Slightly or non-irritating (rabbit)
LD50 Dermal > 4000 mg/kg (rat)
LD50 Oral 4077 mg/kg (rat)
LC50 Inhalation > 6.31 mg/L 4 hr (rat)
Sensitization Non-sensitizing

Chronic Effects
Chronic toxicity Carfentrazone-ethyl: Long-term exposure caused hematotoxicity and deposit of porphyrin in the liver in animal studies.
Carcinogenicity Carfentrazone-ethyl : No evidence of carcinogenicity from animal studies. There was no evidence of carcinogenic activity of naphthalene in male mice, but there was some evidence of carcinogenic activity in female mice and clear evidence of carcinogenic activity in male and female rats in 2-year inhalation studies conducted by the National Toxicology Program (NTP).

Mutagenicity Carfentrazone-ethyl : Not genotoxic in laboratory studies.
Reproductive toxicity Carfentrazone-ethyl : No toxicity to reproduction in animal studies.
Neurological effects Carfentrazone-ethyl : Not neurotoxic.
Developmental toxicity Carfentrazone-ethyl : Not teratogenic in animal studies.

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Chemical name	ACGIH	IARC	NTP	OSHA	NIOSH - Target Organs
Naphthalene	A3	Group 2B	Reasonably Anticipated	X	eyes,blood,liver,kidneys,skin,CNS

Legend:

ACGIH (American Conference of Governmental Industrial Hygienists)
A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)
Group 2B - Possibly Carcinogenic to Humans
NTP (National Toxicology Program)
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

ECOLOGICAL INFORMATION:

Ecotoxicity effects

Carfentrazone-ethyl (128639-02-1)				
Active Ingredient(s)	Duration	Species	Value	Units
Carfentrazone-ethyl	72 h EC50	Algae	0.012	mg/L
	96 h LC50	Fish	1.6	mg/L
	48 h LC50	Daphnia	>9.8	mg/L
	96 h NOEC	Algae	1.0	µg/L
	21 d NOEC	Fish	0.0187	mg/L
	21 d NOEC	Crustacea	0.22	mg/L

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to Microorganisms	Toxicity to daphnia and other aquatic invertebrates
Naphtha (petroleum), heavy aromatic		96 h LC50: = 19 mg/L (Pimephales promelas) 96 h LC50: = 2.34 mg/L (Oncorhynchus mykiss) 96 h LC50: = 1740 mg/L (Lepomis macrochirus) 96 h LC50: = 45 mg/L (Pimephales promelas) 96 h LC50: = 41 mg/L (Pimephales promelas)		48 h EC50: 0.95 mg/L (Daphnia magna)
Naphthalene		96 h LC50: 5.74 - 6.44 mg/L (Pimephales promelas) 96 h LC50: = 1.6 mg/L (Oncorhynchus mykiss) 96 h LC50: 0.91 - 2.82 mg/L (Oncorhynchus mykiss) 96 h LC50: = 1.99 mg/L (Pimephales promelas) 96 h LC50: = 31.0265 mg/L (Lepomis macrochirus)		48 h LC50: 2.16 mg/L (Daphnia magna) 48 h EC50: 1.96 mg/L (Daphnia magna) 48 h EC50: 1.09 - 3.4 mg/L (Daphnia magna)

Environmental Fate

Chemical name	Partition coefficient
2-Methylnaphthalene	3.86
Naphthalene	3.3

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Persistence and degradability Carfentrazone-ethyl : Non-persistent. Readily hydrolyzed. Not readily biodegradable.
Bioaccumulation Carfentrazone-ethyl : The substance does not have a potential for bioconcentration.
Mobility Carfentrazone-ethyl : Mobility in soil: Not relevant

DISPOSAL CONSIDERATIONS:

Waste disposal methods Improper disposal of excess pesticide, spray mixture, or rinsate is prohibited. If these wastes cannot be disposed of by use according to label instructions, contact appropriate disposal authorities for guidance.
Contaminated Packaging Containers must be disposed of in accordance with local, state and federal regulations. Refer to the product label for container disposal instructions. Do not reuse or refill this container.

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