

Thyborønvej 78 DK-7673 Harboøre

Denmark +45 9690 9690 www.fmc.com

CVR No. DK 12 76 00 43

Material group	6019	Page 1 of 12
Product name	Carfentrazone-ethyl 61% MUP	
		Revision: December 2020
Safety data sheet	according to EU Reg. 1907/2006 as amended	Supersedes 01/06/2015

# SAFETY DATA SHEET Carfentrazone-ethyl 61% MUP

Revision: Sections containing a revision or new information are marked with a .

#### \* SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier ...... Carfentrazone-ethyl 61% MUP

1.2. Relevant identified uses of the substance or mixture and uses advised against ......

Can be used for production of herbicides only.

1.3. Details of the supplier of the safety data sheet

FMC Agricultural Solutions A/S

Thyborønvej 78 DK-7673 Harboøre

Denmark

SDS.Ronland@fmc.com

1.4. Emergency telephone number

**Medical emergencies:** 

Austria: +43 1 406 43 43 Malta: 112

Belgium: +32 70 245 245 Netherlands: +31 30 274 88 88 Bulgaria: +359 2 9154 409 Norway: +47 22 591300 Poland: +48 22 619 66 54

Czech Republic: +420 224 919 293 +48 22 619 08 97

+420 224 915 402 Portugal: 800 250 250 (in Portugal only)

Denmark: +45 82 12 12 +351 21 330 3284
England and Wales: 111
Estonia: +372 7943500
Finland: +358 9 471 977
France: +33 (0) 1 45 42 59 59

Solvenia: +386 41 650 500

Greece: 30 210 77 93 777 South Africa: +27 83 123 3911 (Bateleur Emergency Response Co.)

Hungary: +36 80 20 11 99 Spain: +34 91 562 04 20 Ireland (Republic): +353 1 837 9964 Sweden: +46 08-331231

Italy: +39 02 6610 1029 112 Latvia: +371 670 42 473 Switzerland: 145 112 Turkey: 114

+370 687 53378 All other countries: +1 651 / 632 6793 (Collect)

For fire, leak, spill or other accident emergencies:

Luxembourg: +352 8002 5500

U.S.A.: +1 800 / 424 9300 (CHEMTREC)

All other countries: +1 703 / 527 3887 (CHEMTREC - Collect)



Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690 www.fmc.com

CVR No. DK 12 76 00 43

Material group	6019	Page 2 of 12
Product name	Carfentrazone-ethyl 61% MUP	
		December 2020

1.	Classification of the substance or mixture	Hazards to the aquatic environment, acute: Category 1 (H400) chronic Category 1 (H410)
	WHO classification	Class U (unlikely to present acute hazard in normal use).
	Health hazards	Serious hazards to health are not expected unless in case of large exposure.
	Environmental hazards	The product is expected to be toxic to most plants.
2.	Label elements According to EU Reg. 1272/2008 a	as amended
	Product identifier	Carfentrazone-ethyl 61% MUP
	Hazard pictogram (GHS09)	
	Signal word	Warning
	Hazard statement H410	Very toxic to aquatic life with long lasting effects.
	Supplementary hazard statement EUH401	To avoid risks to human health and the environment, comply with the instructions of use.
	Precautionary statements	
	P273	Avoid release to the environment.
	P391 P501	Collect spillage. Dispose of contents and container as hazardous waste.
3.	Other hazards	None of the ingredients in the product meets the criteria for being PB or vPvB.

3.1.	Substances	The product is a mixture, not a substance.
3.2.	Mixtures	See section 16 for full text of hazard statements.
	Active ingredient Carfentrazone-ethyl CAS name	Content: $59-63\%$ w/w Benzenepropanoic acid, $\alpha$ ,2-dichloro-5-[4-(difluoromethyl)-4,5-dihydro-3-methyl-5-oxo-1H-1,2,4-triazole-1-yl]-4-fluoro, ethyl ester

128639-02-1

CAS no. .....



Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690 www.fmc.com CVR No. DK 12 76 00 43

Material group	6019	Page 3 of 12
Product name	Carfentrazone-ethyl 61% MUP	5
		December 2020

IUPAC name(s) ...... Ethyl 2-chloro-3-(2-chloro-5-(4-difluoromethyl)-3-methyl-5-oxo-4,5-

dihydro-1H-1,2,4-triazol-1-yl)-4-fluorophenyl)propanoate

ISO name/EU name ...... Carfentrazone-ethyl

EC no. (EINECS no.) ...... None

EU index no. 607-309-00-5 Molecular weight 412.19

Classification of the ingredient ..... Hazards to the aquatic environment,

acute: Category 1 (H400), M-factor 100 chronic: Category 1 (H410), M-factor 100

#### **♣** SECTION 4: FIRST AID MEASURES

4.1.	Description of first aid measures Inhalation	If experiencing any discomfort, immediately remove from exposure. Light cases: Keep person under surveillance. Get medical attention immediately if symptoms develop. Serious cases: Get medical attention immediately or call for an ambulance.
	Skin contact	Immediately remove contaminated clothing and footwear. Flush skin with water. Wash with water and soap. See physician if any symptom develops.
	Eye contact	Immediately rinse eyes with much water or eyewash solution, occasionally opening eyelids, until no evidence of chemical remains. Remove contact lenses after a few minutes and rinse again. See physician if irritation develops.
	Ingestion	Inducing vomiting is not recommended. Let the exposed person rinse mouth and drink water or milk. If vomiting does occur, let him/her rinse mouth and drink fluids again. Call a doctor or get medical attention immediately.
4.2.	Most important symptoms and effects, both acute and delayed	None known
4.3.	Indication of any immediate medical attention and special	Immediate medical attention is required in case of ingestion
	treatment needed	It may be helpful to show this safety data sheet to physician.
	Note to physician	A specific antidote against this substance is not known. Gastric lavage and/or administration of activated charcoal can be considered. After

#### **\*** SECTION 5: FIRE-FIGHTING MEASURES

5.2. Special hazards arising from the substance or mixture

The essential breakdown products are volatile, toxic, irritant and inflammable compounds such as hydrogen fluoride, hydrogen

decontamination, treatment is supportive and symptomatic.



Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690 www.fmc.com CVR No. DK 12 76 00 43

Material group	6019	Page 4 of 12
Product name	Carfentrazone-ethyl 61% MUP	
		December 2020

chloride, nitrogen oxides, carbon monoxide, carbon dioxide and various fluorinated and chlorinated organic compounds.

5.3. Advice for firefighters .....

Use water spray to keep fire-exposed containers cool. Approach fire from upwind to avoid hazardous vapours and toxic decomposition products. Fight fire from protected location or maximum possible distance. Dike area to prevent water runoff. Firemen should wear self-contained breathing apparatus and protective clothing.

#### **♣** SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

It is recommended to have a predetermined plan for the handling of spills. Empty, closable vessels for the collection of spills should be available.

In case of large spill (involving 10 tonnes of the product or more):

- 1. use personal protection equipment; see section 8
- 2. call emergency telephone no.; see section 1
- 3. alert authorities.

Observe all safety precautions when cleaning up spills. Use personal protection equipment. Depending on the magnitude of the spill this may mean wearing respirator, face mask or eye protection, chemical resistant clothing, gloves and rubber boots.

Stop the source of the spill immediately if safe to do so. Reduce and avoid formation of airborne dust as much as possible, if appropriate by moistening.

6.2. Environmental precautions .......

Contain the spill to prevent any further contamination of surface, soil or water. Wash waters must be prevented from entering surface water drains. Uncontrolled discharge into water courses must be alerted to the appropriate regulatory body.

6.3. Methods and materials for containment and cleaning up

It is recommended to consider possibilities to prevent damaging effects of spills, such as bunding or capping. See GHS (Annex 4, Section 6).

Surface water drains should be covered if appropriate. Minor spills on the floor or other impervious surface should immediately be swept up or preferably vacuumed up using equipment with high efficiency final filter. Transfer to suitable containers. Clean area with strong industrial detergent and much water. Absorb wash liquid onto inert absorbent such as universal binder, Fuller's earth, bentonite or other absorbent clay and collect in suitable containers. The used containers should be properly closed and labelled.

Large spills which soak into the ground should be dug up and transferred to suitable containers.



Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690 www.fmc.com CVR No. DK 12 76 00 43

Material group	6019	Page 5 of 12
Product name	Carfentrazone-ethyl 61% MUP	
		December 2020

Spills in water should be contained as much as possible by isolation of the contaminated water. The contaminated water must be collected and removed for treatment or disposal.

6.4. Reference to other sections .......

See subsection 8.2. for personal protection. See section 13 for disposal.

#### **SECTION 7: HANDLING AND STORAGE**

#### 7.1. Precautions for safe handling ....

In an industrial environment, it is recommended to avoid all personal contact with the product, if possible by using closed systems with remote system control. The material should be handled by mechanical means as much as possible. Adequate ventilation or local exhaust ventilation is required. The exhaust gases should be filtered or treated otherwise. For personal protection in this situation, see section 8.

For its use as a pesticide, first look for precautions and personal protection measures on the officially approved label on the packaging or for other official guidance or policy in force. If these are lacking, see section 8.

Avoid contact with eyes, skin or clothing. Avoid breathing vapour or dust.

Remove contaminated clothing immediately. Wash thoroughly after handling. Before removing gloves, wash them with water and soap. After work, take off all work clothes and footwear. Take a shower, using water and soap. Wear only clean clothes when leaving job. Wash protective clothing and protective equipment with water and soap after each use.

Do not discharge to the environment. Do not contaminate water when disposing of equipment wash waters. Collect all waste material and remains from cleaning equipment, etc., and dispose of as hazardous waste. See section 13 for disposal.

## 7.2. Conditions for safe storage, including any incompatibilities

The product is stable under normal conditions of warehouse storage.

Keep in closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present. A hand wash station should be available.

7.3. **Specific end use(s)** ......

The product is meant for the production of pesticides, which may be used for officially allowed purposes only.



Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690 www.fmc.com CVR No. DK 12 76 00 43

Material group	6019	Page 6 of 12
Product name	Carfentrazone-ethyl 61% MUP	
		December 2020

### ♣ SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1.	Control	parameters

product. However, personal exposure limits defined by local

regulations may exist and must be observed.

Carfentrazone-ethyl

The EFSA has established an AOEL of 0.6 mg/kg bw/day

PNEC, aquatic environment .......  $1.1 \mu g/l$ 

8.2. Exposure controls ......

When used in a closed system, personal protection equipment will not be required. The following is meant for other situations, when the use of a closed system is not possible, or when it is necessary to open the system. Consider the need to render equipment or piping systems non-

hazardous before opening.

In cases of incidental high exposure, maximal personal protection equipment may be necessary, such as respirator, face mask, chemical

resistant coveralls.

Respiratory protection

The product does not automatically present an airborne exposure concern when handled carefully, but in the event of an accidental discharge of the material which produces a heavy vapour or dust, workers must put on officially approved respiratory protection

equipment with a universal filter type including particle filter.



Protective gloves .....

Wear chemical resistant gloves, such as barrier laminate, butyl rubber or nitrile rubber. The breakthrough times of these materials for the product are unknown, but it is expected that they will give adequate protection. It is recommended to limit the work to be done manually.



Eye protection .......

Wear safety glasses. It is recommended to have an eye wash fountain immediately available in the workplace when there is a potential for

eye contact.



Other skin protection

Wear appropriate chemical resistant clothing to prevent skin contact depending on the extent of exposure. During most normal work situations where exposure to the material cannot be avoided for a limited time span, waterproof pants and apron of chemical resistant material or coveralls of polyethylene (PE) will be sufficient. Coveralls of PE must be discarded after use if contaminated. In cases of excessive or prolonged exposure, coveralls of barrier laminate may be required.



Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690

www.fmc.com CVR No. DK 12 76 00 43

Material group	6019	Page 7 of 12
Product name	Carfentrazone-ethyl 61% MUP	
		December 2020

#### **\*** SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and

chemical properties

Physical state ..... Solid White Colour .....

Odour ..... Very weak, of aromatic hydrocarbons

Melting point/freezing point ....... Not determined

Boiling point or initial boiling point

and boiling range ..... Not determined Not ignitable Flammability ..... Lower and upper explosive limit ... Not determined 229°C (closed cup) Flash point ..... Not determined Auto-ignition temperature ..... Decomposition temperature ....... Not determined

5% dispersion in water: 5.6 - 6.6 pH .....

Kinematic viscosity ..... Not determined

Solubility of carfentrazone-ethyl at 20°C in Solubility .....

> ethanol > 2000 g/lhexane  $30 \, g/l$ water 12 mg/l

Partition coefficient n-octanol/water

Carfentrazone-ethyl :  $\log K_{ow} = 3.36$  at  $20^{\circ}C$ (log value) ..... Carfentrazone-ethyl : 7.2 x 10<sup>-6</sup> Pa at 20°C Vapour pressure .....

Density and/or relative density ..... Not determined Relative vapour density ...... Not determined

Particle characteristics ..... Powder

No more relevant information is available. 9.2. Other information .....

#### **♣ SECTION 10: STABILITY AND REACTIVITY**

10.1. **Reactivity** ...... To our knowledge, the product has no special reactivities.

10.2. Chemical stability ..... The product is stable during normal handling and storage at ambient

temperatures.

10.3. Possibility of hazardous reactions None known.

10.4. Conditions to avoid ..... Heating of the product may evolve harmful and irritant vapours.

10.5. **Incompatible materials** ...... None known.

10.6. Hazardous decomposition products See subsection 5.2.

#### **♣ SECTION 11: TOXICOLOGICAL INFORMATION**

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

\* = Based on available data, the classification criteria are not met.



FMC Agricultural Solutions A/S Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690 www.fmc.com CVR No. DK 12 76 00 43

Material group	6019	Page 8 of 12
Product name	Carfentrazone-ethyl 61% MUP	
		December 2020

Product Acute toxicity		The product is not harmful by inhalation, in contact with skin or if swallowed. * However, it should always be treated with the usual care of handling chemicals. The acute toxicity is estimated as:		
Route(s) of entry - ingestion		LD <sub>50</sub> , oral, rat: > 2000 mg/kg		
	- skin	$LD_{50}$ , dermal, rat: $> 2000 \text{ mg/kg}$		
	- inhalation	$LC_{50}$ , inhalation, rat: $> 5 \text{ mg/l/4 h}$		
Skin corrosion/irritat	ion	Not expected to be irritating to skin. *		
Serious eye damage/	irritation	Not expected to be irritating to eyes. *		
Respiratory or skin se	ensitisation	Not expected to be a skin sensitizer. *		
Germ cell mutagenic	ity	The product contains no ingredients known to be mutagenic. *		
Carcinogenicity		The product contains no ingredients known to be carcinogenic. *		
Reproductive toxicity		The product contains no ingredients found to have adverse effects on reproduction. *		
STOT – single exposure		To our knowledge, no specific effects have been observed after single exposure. *		
STOT – repeated exposure		The following was measured on the active ingredient carfentrazone-ethyl: NOAEL: 50 ppm (3 mg/kg bw/day) in a 2-year rat study.		
Aspiration hazard		The product contains no ingredients known to present an aspiration pneumonia hazard. *		
Carfentrazone-ethyl				
Toxicokinetics, metabolism and distribution		Carfentrazone-ethyl is rapidly absorbed and widely distributed in the body after oral intake. It is extensively metabolised and rapidly excreted, almost completely within 7 days. There is no evidence of accumulation.		
Acute toxicity		The substance is not considered as harmful. * The acute toxicity of the substance is measured as:		
Route(s) of entry	- ingestion	LD <sub>50</sub> , oral, rat: > 5000 mg/kg		
	- skin	$LD_{50}$ , dermal, rat: $> 4000 \text{ mg/kg}$		
	- inhalation	$LC_{50}$ , inhalation, rat: > 5.09 mg/l/4 h		
Skin corrosion/irritation		Not irritating to skin. *		
Serious eye damage/	irritation	Not irritating to eyes. *		



Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690 www.fmc.com CVR No. DK 12 76 00 43

Material group	6019	Page 9 of 12
Product name	Carfentrazone-ethyl 61% MUP	
		December 2020

Respiratory or skin sensitisation ... Not sensitising. \*

11.2. Information on other hazards .... No more relevant information is available.

11.2.	information on	other hazards	No more relevant information	on is available.
♣ SE	CCTION 12: EC	OLOGICAL INFORM	MATION	
12.1.	Toxicity		fish and harmful to aquatic i	e harmful to all green plants. It is toxic to nvertebrates. It is considered as less soil micro- and macroorganisms.
	The ecotoxicity	of carfentrazone-ethyl	is measured as:	
	- Fish	Rainbow trout (Onco	rhynchus mykiss)	96-h LC <sub>50</sub> : 1.6 mg/l 28-day NOEC: 0.11 mg/l
	- Invertebrates	Daphnids (Daphnia n	nagna)	48-h EC <sub>50</sub> : > 9.8 mg/l 21-day NOEC: 0.22 mg/l
	- Algae	Bluegreen algae (Ana	ıbaena flos-aquae)	72-h EC <sub>50</sub> : 0.012 mg/l
	- Plants	Duckweed (Lemna ga	ibba)	14-day EC <sub>50</sub> : 5.7 μg/l
	- Earthworms	Eisenia foetida foetid	'a	LC <sub>50</sub> : > 820 mg/kg soil
	- Birds	Mallard duck (Anas p	olatyrhynchos)	Dietary LD <sub>50</sub> : > 5620 ppm
		Bobwhite quail (Coli	nus virginianus)	Dietary LD <sub>50</sub> : > 5620 ppm
	- Insects	Bees		$LD_{50}$ , oral: $> 200~\mu g/bee$ $LD_{50}$ , contact: $> 200~\mu g/bee$
12.2.	Persistence and	l degradability	Carfentrazone-ethyl is not readily biodegradable. Primary degradation in the environment is rapid, usually less than one day, but degradation products are degraded much slower.	
12.3.	3. Bioaccumulative potential		See section 9 for n-octanol/water partition coefficient.	
			Carfentrazone-ethyl is not expected to bioaccumulate. A Bioaccumulation Factor (BCF) of 176 was measured for whole fish.	
12.4.	Mobility in soil		Carfentrazone-ethyl and its soil metabolites have a potential for being mobile, but were not detected in a field leaching study.	
12.5.		Results of PBT and vPvB  assessment		ts the criteria for being PBT or vPvB.
12.6.	Endocrine disr	upting properties	None of the ingredients is known to have endocrine disrupting properties.	
12.7.	Other adverse	effects	Other relevant hazardous eff	ects in the environment are not known.



Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690 www.fmc.com CVR No. DK 12 76 00 43

Ī	Material group	6019	Page 10 of 12
ſ	Product name	Carfentrazone-ethyl 61% MUP	
			December 2020

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possibilities for reuse or reprocessing should first be considered. If this is not possible, the material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with

flue gas scrubbing.

Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Disposal of packaging ...... It is recommended to consider possible ways of disposal in the following order:

1. Reuse or recycling should first be considered. If offered for recycling, containers must be emptied and triply rinsed (or equivalent). Do not discharge rinsing water to sewer systems.

2. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

3. Delivery of the packaging to a licensed service for disposal of hazardous waste.

4. Disposal in a landfill or burning in open air should only occur as a last resort. For disposal in a landfill, containers should be emptied completely, rinsed and punctured to make them unusable for other purposes. If burned, stay out of smoke.

damage to health. Do not discharge to the environment.

#### **SECTION 14: TRANSPORT INFORMATION**

#### ADR/RID/IMDG/IATA/ICAO classification

14.1. <b>UN number</b>	3077
14.2. UN proper shipping name	Environmentally hazardous substance, solid, n.o.s. (carfentrazone-ethyl)
14.3. Transport hazard class(es)	9
14.4. Packing group	III
14.5. Environmental hazards	Marine pollutant
14.6. Special precautions for user	Avoid any unnecessary contact with the product. Misuse can result in



Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690 www.fmc.com CVR No. DK 12 76 00 43

Material group	6019	Page 11 of 12
Product name	Carfentrazone-ethyl 61% MUP	
		December 2020

14.7. Maritime transport in bulk according to IMO instruments ...

The product is not transported in bulk by ship.

#### **\*** SECTION 15: REGULATORY INFORMATION

Seveso category (Dir. 2012/18/EU): dangerous for the environment.

15.2. Chemical safety assessment .......

A chemical safety assessment is not required to be included for this

product.

#### **♣ SECTION 16: OTHER INFORMATION**

Relevant changes in the safety data sheet

Numerous changes have been made to adapt the format of the safety data sheet, but these do not involve new information on hazardous

properties.

List of abbreviations ...... AOEL

AOEL Acceptable Operator Exposure Level

CAS Chemical Abstracts Service

Dir. Directive

DNEL Derived No Effect Level
EC European Community
EC<sub>50</sub> 50% Effect Concentration
EFSA European Food Safety Authority

EINECS European INventory of Existing Commercial Chemical

Substances

GHS Globally Harmonized classification and labelling System of

chemicals, seventh revised edition 2017

IMO International Maritime Organisation

ISO International Organisation for Standardization IUPAC International Union of Pure and Applied Chemistry

LC<sub>50</sub> 50% Lethal Concentration

LD<sub>50</sub> 50% Lethal Dose

MUPManufacturing Use ProductNOAELNo Observed Adverse Effect LevelNOECNo Observed Effect Concentration

n.o.s. Not otherwise specified

PBT Persistent, Bioaccumulative, Toxic PNEC Predicted No Effect Concentration

Reg. Regulation

STOT Specific Target Organ Toxicity vPvB very Persistent, very Bioaccumulative

WHO World Health Organisation

places.



Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690 www.fmc.com CVR No. DK 12 76 00 43

Material group	6019	Page 12 of 12
Product name	Carfentrazone-ethyl 61% MUP	
		December 2020

The information provided in this safety data sheet is believed to be accurate and reliable, but uses of the product vary and situations unforeseen by FMC Corporation may exist. The user has to check the validity of the information under local circumstances.

Prepared by: FMC Agricultural Solutions A/S / GHB