

Thyborønvej 78 DK-7673 Harboøre

Denmark +45 9690 9690 www.fmc.com

CVR No. DK 12 76 00 43

Product code	6270	Page 1 of 12
Product name	CIRRUS CS	
		June 2019
Safety data sheet according to EU Reg. 1907/2006 as amended		Supersedes September 2018

# SAFETY DATA SHEET Cirrus CS

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

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

# 1.4. Emergency telephone number

<u>Medical emergencies:</u>

 Austria: +43 1 406 43 43
 Luxembourg: +352 8002 5500

 Belgium: +32 70 245 245
 Netherlands: +31 30 274 88 88

 Bulgaria: +359 2 9154 409
 Norway: +47 22 591300

 Cyprus: 1401
 Poland: +48 22 619 66 54

Czech Republic: +420 224 919 293 +48 22 619 08 97 +420 224 915 402 Portugal: 808 250 143 (in Portugal only)

+420 224 915 402 Portugal: 808 250 143 (in P

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

112

Switzerland: 145

Turkey: 114

Lithuania: +370 523 62052 U.S.A. & Canada: +1 800 / 331 3148

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

For fire, leak, spill or other accident emergencies:

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

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



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#### **SECTION 2: HAZARDS IDENTIFICATION**

2.1. Classification of the substance or

2.2. Label elements

According to EU Reg. 1272/2008 as amended

Product identifier ...... Cirrus CS

H413 ...... May cause long lasting harmful effects to aquatic life.

Precautionary statements ...... None

Supplementary hazard statements

EUH210 ...... Safety data sheet available on request.

EUH401 ...... To avoid risks to human health and the environment, comply with the

instructions of use.

or vPvB.

#### **♣** SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. **Mixtures** ...... See section 16 for full text of hazard statements.

Cirrus CS is a suspension in water of porous microcapsules containing

the active ingredient clomazone.

Active ingredient

Clomazone ...... Content: 32% w/w

CAS no. 81777-89-

IUPAC name(s) ...... 2-(2-Chlorobenzyl)-4,4-dimethyl-1,2-oxazolidin-3-one

2-(2-Chlorobenzyl)-4,4-dimethylisoxazolidin-3-one

Classification of the ingredient ..... Acute oral toxicity: Category 4 (H302)

Acute inhalation toxicity: Category 4 (H332)

Hazards to the aquatic environment, acute: Category 1 (H400) chronic: Category 1 (H410)



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Reportable ingredients	Content (% w/w)	CAS no.	EC no. (EINECS no.)	Classification  * = harmonised classification
Sodium nitrate	5	7631-99-4	231-554-3	Ox. Sol. 3 (H272) * Acute Tox. 3 (H301) * Eye Irrit. 2 (H319) Aquatic Acute 1 (H400) *
Lignosulfonic acid, sodium salt, sulfomethylated	1	68512-34-5	None	Eye Irrit. 2 (H319)

# **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. Get medical attention 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. Get medical attention if irritation develops.
	Ingestion	Let the exposed person rinse mouth and drink several glasses of water or milk, but not induce vomiting. If vomiting does occur, let him/her rinse mouth and drink fluids again. Get medical attention immediately.
4.2.	Most important symptoms and effects, both acute and delayed	When fed to animals, the active ingredient in this product caused decreased activity, tearing eyes, bleeding from the nose and incoordination
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.
	Notes to physician	A specific antidote for exposure to this material is not known. Gastric lavage and/or the administration of activated charcoal can be considered. After decontamination, treatment should be directed at the control of symptoms and the clinical condition.

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



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5.2. Special hazards arising from the substance or mixture

The essential breakdown products are volatile, malodorous, toxic, irritant and inflammable compounds such as hydrogen chloride, nitrogen oxides, carbon monoxide, carbon dioxide and various 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. Keep unprotected persons away from the spill area.

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).

If appropriate, surface water drains should be covered. Minor spills on the floor or other impervious surface should be absorbed onto an absorptive material such as universal binder, Fuller's earth or other absorbent clays. Collect the contaminated absorbent in suitable containers. Clean area with detergent and much water. Absorb wash liquid with absorbent and transfer to 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.

Spills in water should be contained as much as possible by isolation of



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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.

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. Protect from frost and extreme heat.

Store 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. A warning sign reading "POISON" is recommended. 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 a registered pesticide which may only be used for the applications it is registered for, in accordance with a label approved by the regulatory authorities.

# SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

# 8.1. Control parameters



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exposure limits defined by local regulations may exist and must be observed.

Clomazone

DNEL ...... Not established

EFSA has established an AOEL of 0.133 mg/kg bw/day

PNEC, aquatic environment ....... 0.22 mg/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 nonhazardous before opening.

The precautions mentioned below are primarily meant for handling of the undiluted product and for preparing the spray solution, but can be recommended for spraying as well.

In cases of incidental high exposure, maximal personal protection 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 mist, 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.



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.

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

# 9.1. **Information on physical and** chemical properties

Appearance ..... Light beige liquid



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Odour threshold ...... Not determined

Melting point/freezing point ....... Not determined Initial boiling point and boiling range Not determined

Upper/lower flammability or

explosive limits ...... Not determined

capsules.

**Clomazone** is soluble in acetone, acetonitrile, chloroform, cyclohexanone, dichloromethane, methanol, toluene, heptane,

dimethylformamide.

Solubility of clomazone in water: 1100 mg/l**Clomazone** :  $\log K_{ow} = 2.5$ 

Partition coefficient n-octanol/water Autoignition temperature .....

Clomazone 392°C

Decomposition temperature ........ Not determined

9.2. Other information

Miscibility ...... The product is dispersible in water.

# SECTION 10: STABILITY AND REACTIVITY

temperatures.

10.3. **Possibility of hazardous reactions** None known.

10.4. **Conditions to avoid** ...... Heating of the product will 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 toxicological effects** \* = Based on available data, the classification criteria are not met.

**Product** 

acute toxicity is measured as:



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Route(s) of entry	- ingestion	$LD_{50}$ , oral, rat: $> 5000 \text{ mg/kg}$ (method OECD 401)
	- skin	LD <sub>50</sub> , dermal, rat: > 5000 mg/kg (method OECD 402)
	- inhalation	$LC_{50}$ , inhalation, rat: > 5.21 mg/l/4 h (method OECD 403)
Skin corrosion/irrita	tion	Not irritating to skin (method OECD 404). *
Serious eye damage	/irritation	Not irritating to eyes (method OECD 405). *
Respiratory or skin s	sensitisation	Not sensitising (method OECD 429). *
Germ cell mutagenio	city	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 has been measured on the active ingredient clomazone: Target organ: liver LOAEL: 4000 ppm (400 mg/kg bw/day) in a 90-day rat study (method OECD 408). At this dose level, increased liver weight and increased cholesterol were seen. *
Aspiration hazard		The product does not present an aspiration hazard. *
Symptoms and effects, acute and delayed		When fed to animals, the active ingredient in this product caused decreased activity, tearing eyes, bleeding from the nose and incoordination.

#### Clomazone

This formulation contains **microencapsulated clomazone**. The toxicity of encapsulated clomazone is lower than that of clomazone itself. It approaches the toxicity of clomazone only in cases where grinding actions break up the capsules, thus freeing the active ingredient.

Toxicokinetics, metabolism and distribution	Clomazone is rapidly absorbed and excreted. It is widely distributed in the body and almost completely metabolised. There is no evidence of accumulation.
Acute toxicity	Clomazone is harmful by ingestion. The acute toxicity is measured as:
Route(s) of entry - ingestion	LD <sub>50</sub> , oral, rat (female): 768 mg/kg (method OECD 425)
- skin	$LD_{50},$ dermal, rat: $>\!2000$ mg/kg (method OECD 402) *
- inhalation	$LC_{50}$ , inhalation, rat: $> 5.02$ mg/l/4 h (method OECD 403) *
Skin corrosion/irritation	Slightly irritating to skin (method OECD 404). *
Serious eye damage/irritation	Slightly irritating to eyes (method OECD 405). *



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Not a skin sensitizer (method OECD 429). \* Respiratory or skin sensitisation ... Sodium nitrate Toxicokinetics, metabolism and Sodium in ionic form is a normal body constituent and regulated distribution between narrow ranges. These ranges will not be exceeded, except locally in unusual situations such as accidents. Nitrate ion is expected to be absorbed and widely distributed in the body. The substance is not considered as harmful. \* The acute toxicity is Acute toxicity ..... measured as: Route(s) of entry - ingestion LD<sub>50</sub>, oral, rat: 3430 mg/kg (method OECD 401) - skin  $LD_{50}$ , dermal, rat: > 5000 mg/kg(measured on s similar substance, method OECD 402) - inhalation LC<sub>50</sub>, inhalation, rat: not available Skin corrosion/irritation ..... Not irritating to skin (measured on a similar product; method OECD 404). \* Serious eye damage/irritation ...... Irritating to eyes (method OECD 405). Respiratory or skin sensitisation ... Did not cause sensitisation (method OECD 429). \* <u>Lignosulfonic acid, sodium salt, sulfomethylated</u> Acute toxicity ..... The substance is not considered as harmful by single exposure. \* Route(s) of entry - ingestion LD<sub>50</sub>, oral, rat: not available LD<sub>50</sub>, dermal, rat: not available - skin - inhalation LC<sub>50</sub>, inhalation, rat: not available

#### SECTION 12: ECOLOGICAL INFORMATION

Serious eye damage/irritation ......

Causes serious eye irritation.

harmful to all plants. It is considered as non-toxic to algae, daphnids, fish, soil micro- and macroorganisms, birds and insects.

The ecotoxicity measured on the product is:

12.2. **Persistence and degradability** .... **Clomazone** is moderately persistent in the environment.

Primary degradation half-lives vary with circumstances, from a few



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weeks to a few months in aerobic soil and water. Degradation occurs microbiologically.

The product contains minor amounts of not readily biodegradable components, which may not be degradable in waste water treatment plants.

12.3. **Bioaccumulative potential** ........ See section 9 for octanol-water partition coefficient.

**Clomazone** has a low potential to bioaccumulate. The measured bioaccumulation factor of clomazone is 27 - 40. It is rapidly excreted.

12.5. Results of PBT and vPvB assessment .....

None of the ingredients meets the criteria for being PBT or vPvB.

12.6. **Other adverse effects** ............... Other relevant hazardous effects in the environment are not known.

#### SECTION 13: DISPOSAL CONSIDERATIONS

Disposal of product .....

13.1. **Waste treatment methods** ......... Remaining quantities of the material and empty but unclean packaging should be regarded as hazardous waste.

Disposal of waste and packagings must always be in accordance with

all applicable local regulations.

According to the Waste Framework Directive (2008/98/EC), possibilities for reuse or reprocessing should first be considered. If this is not feasible, 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. Reuse is prohibited except by the authorisation holder. 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.



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

# ADR/RID/IMDG/IATA/ICAO classification

14.2. **UN proper shipping name** ......... Not applicable

14.3. **Transport hazard class(es)** ....... Not applicable

14.4. **Packing group** ...... Not applicable

14.5. **Environmental hazards** ...... May be hazardous in the environment

14.6. **Special precautions for user** ...... Avoid any unnecessary contact with the product. Misuse can result in

damage to health. Do not discharge to the environment.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the

**IBC code** ...... The product is not transported in bulk by ship.

# **SECTION 15: REGULATORY INFORMATION**

15.1. Safety, health and environmental regulations/legislation specific for

the substance or mixture ........... To our knowledge, no specific regulations apply.

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

product.

# **SECTION 16: OTHER INFORMATION**

CAS Chemical Abstracts Service

CS Capsule Suspension

Dir. Directive

DNEL Derived No Effect Level EC European Community EC<sub>50</sub> 50% Effect Concentration

 $E_rC_{50}$  50% Effect Concentration based on growth

EFSA European Food Safety Authority

EINECS European INventory of Existing Commercial Chemical

Substances

GHS Globally Harmonized classification and labelling System

of chemicals, Fifth revised edition 2013

IBC International Bulk Chemical code

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

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



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		50% Lethal Dose Lowest Observed Adverse Effect Level Set of rules from the International Maritime Organisation (IMO) for prevention of sea pollution Organisation for Economic Cooperation and Development Persistent, Bioaccumulative, Toxic Predicted No Effect Concentration Regulation Specific Target Organ Toxicity very Persistent, very Bioaccumulative World Health Organisation
References	Data measured on the product are unpublished company data. Data on ingredients are available from published literature and can be found several places.	
Method for classification	Test data	
Used hazard statements	H272 H301 H302 H319 H332 H400 H410 EUH210 EUH401	May intensify fire; oxidiser. Toxic if swallowed. Harmful if swallowed. Causes serious eye irritation. Harmful if inhaled. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects. Safety data sheet available on request. To avoid risks to human health and the environment, comply with the instructions of use.
Advice on training		erial should only be used by persons who are made aware of ous properties and have been instructed in the required cautions.

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