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Product name	EXPRESS® SUPER	February 2019
Safety data sheet according to EU Reg. 1907/2006 as amended		Supersedes June 2018

SAFETY DATA SHEET

EXPRESS® SUPER

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** **EXPRESS® SUPER**
Contains tribenuron-methyl
- 1.2. **Relevant identified uses of the substance or mixture and uses advised against** Can be used as herbicide only.
- 1.3. **Details of the supplier of the safety data sheet** **CHEMINOVA A/S**, a subsidiary of FMC Corporation
 Thyborønvej 78
 DK-7673 Harboøre
 Denmark
SDS.Ronland@fmc.com
- Details of the supplier of the product **FMC Chemicals (Pty) Ltd**
 Pegasus Building 1, Floor 2
 210 Amaranth Ave
 Menlyn
 Pretoria, 0181
 South Africa
- 1.4. **Emergency telephone number** ... **24H emergencies**
 South Africa: 086 199 9071 (Bateleur Emergency Response Co.)
 e-mail: bateleur@bateleur911.co.za
- For fire, leak, spill or other accident emergencies**
 +1 703 / 527 3887 (CHEMTREC - Collect)

♣ SECTION 2: HAZARDS IDENTIFICATION

- 2.1. **Classification of the substance or mixture** Eye irritation: Category 2 (H319)
 Sensitisation – skin: Category 1 (H317)
 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 The product has irritating properties and may cause allergic sensitisation.

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Environmental hazards The product is expected to be toxic to most plants.

2.2. Label elements

According to EU Reg. 1272/2008 as amended

Product identifier Express Super
 Contains tribenuron-methyl

Hazard pictograms (GHS07, GHS09)



Signal word Warning

Hazard statements

H317 May cause an allergic skin reaction.
 H319 Causes serious eye irritation.
 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

P261 Avoid breathing vapours.
 P264 Wash hands thoroughly after handling.
 P280 Wear protective gloves and eye protection.
 P302+P352 IF ON SKIN: Wash with plenty of soap and water.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P501 Dispose of contents/container as hazardous waste.

2.3. **Other hazards** Excessive dust formation may pose a dust explosion hazard.

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

♣ SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. **Substances** The product is a mixture, not a substance.

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

Active ingredients

Tribenuron-methyl Content: 22% by weight
 CAS name Benzoic acid, 2-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)methyl-amino]carbonyl]amino]sulfonyl]-, methyl ester
 CAS no. 101200-48-0

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IUPAC name Methyl 2-[4-methoxy-6-methyl-1,3,5-triazin-2-yl(methyl)carbamoyl-sulfamoyl]benzoate
 ISO name/EU name Tribenuron-methyl
 EC no. ELINCS no: 401-190-1
 EU index no. In 30th amendment to Dir. 67/548/EEC: 613-265-00-3
 In 1st amendment to Reg. 1272/2008: 607-177-00-9
 Molecular weight 395.4
 Classification of the ingredient Skin sensitisation: Category 1B (H317)
 Hazards to the aquatic environment, acute: Category 1 (H400)
 chronic: Category 1 (H410)

Chlorsulfuron Content: 12% by weight
 CAS name Benzenesulfonamide, 2-chloro-N-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]carbonyl]-
 64902-72-3
 CAS no. 1-(2-Chlorophenylsulfonyl)-3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)urea
 IUPAC name Chlorsulfuron
 ISO name/EU name 265-268-5
 EC no. (EINECS no.) 613-121-00-4
 EU index no. 357.8
 Molecular weight Hazards to the aquatic environment, acute: Category 1 (H400)
 Classification of the ingredient chronic: Category 1 (H410)

Metsulfuron-methyl Content: 8% by weight
 CAS name Benzoic acid, 2-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]-
 carbonyl]amino]sulfonyl]-, methyl ester
 74223-64-6
 CAS no. Methyl 2-(4-methoxy-6-methyl-1,3,5-triazin-2-ylcarbamoyl-
 IUPAC name(s) sulfamoyl)benzoate
 ISO name/EU name Metsulfuron-methyl
 EC no. (EINECS no.) None
 EU index no. 613-139-00-2
 Molecular weight 381.4
 Classification of the ingredient Hazards to the aquatic environment, acute: Category 1 (H400)
 chronic: Category 1 (H410)

Reportable ingredients

	Content (% w/w)	CAS no.	EC no. (EINECS no.)	Classification
Sodium carbonate	5 - 10	497-19-8	207-838-8	Eye Irrit. 2 (H319)
Phosphoric acid, trisodium salt, dodecahydrate	1 - 5	10101-89-0	231-509-8	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) STOT SE 3 (H335)
Lignosulfonic acid, sodium salt, sulfomethylated	1 - 5	68512-34-5	None	Eye Irrit. 2 (H319)

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♣ 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. Rinse mouth and drink water or milk. If vomiting does occur, 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

Irritation and allergic reactions.

4.3. Indication of any immediate medical attention and special treatment needed

Immediate medical attention is required in case of ingestion

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 decontamination, treatment is supportive and symptomatic.

♣ SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media	Dry chemical or carbon dioxide for small fires, water spray or foam for large fires. Avoid heavy hose streams.
5.2. Special hazards arising from the substance or mixture	The essential breakdown products are volatile, toxic, irritant and inflammable compounds such as hydrogen chloride, nitrogen oxides, sulphur dioxide, 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.

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♣ 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.

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.

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♣ SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Like most organic powders, the product can form explosive mixtures with air. Avoid dust formation and take precautionary measures against static discharge. Use explosion protected equipment. Keep away from sources of ignition and protect from exposure to fire and heat.

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 dust or spray mist.

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 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.

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♣ SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Personal exposure limits To our knowledge not established for the active ingredients or any other component in this product. An exposure limit of 10 mg/m³ (8-hr TWA) is recommended for other sulphonylureas. However, personal exposure limits defined by local regulations may exist and must be observed.

Tribenuron-methyl

DNEL, systemic
 PNEC, aquatic environment 0.07 mg/kg bw/day
 0.1 µg/l

Chlorsulfuron

DNEL, dermal 0.43 mg/kg bw/day
 PNEC, aquatic environment 0.004 µg/l

Metsulfuron-methyl

DNEL, dermal 0.7 mg/kg bw/day
 PNEC, aquatic environment 16 ng/l

Sodium carbonate

DNEL, inhalation 10 mg/m³
 PNEC, aquatic environment No data available

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.

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 equipment may be necessary, such as respirator, face mask, chemical resistant coveralls.



Respiratory protection

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, nitrile rubber or viton. 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.

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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 brown to brown solid
Odour	Slight, acrid
Odour threshold	Not determined
pH	Not determined
Melting point	Not determined
Initial boiling point and boiling range	Decomposes
Flash point	Not determined
Evaporation rate	Not determined
Flammability (solid/gas)	Not highly flammable
Upper/lower flammability or explosive limits	Not determined
Vapour pressure	Tribenuron-methyl : 5.33×10^{-7} Pa at 25°C Chlorsulfuron : 6.1×10^{-4} Pa at 25°C Metsulfuron-methyl : 1.1×10^{-10} Pa at 20°C 3.3×10^{-10} Pa at 25°C
Vapour density	Not determined
Relative density	Not determined
Solubility(ies)	Bulk density, packed: 0.720 g/cm ³ Solubility of tribenuron-methyl in: acetone 43.8 g/l hexane 0.028 g/l water 0.028 g/l at pH 4 and 25°C 0.050 g/l at pH 5 and 25°C 0.280 g/l at pH 6 and 25°C 2.040 g/l at pH 7 and 20°C Solubility of chlorsulfuron at 20°C in: acetone 37 g/l n-hexane 0.0024 g/l water 0.876 g/l at pH 5 12.5 g/l at pH 7 134 g/l at pH 9 Solubility of metsulfuron-methyl at 25°C in:

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	n-hexane	0.584 mg/l
	ethyl acetate	11.1 g/l
	water	0.55 g/l at pH 5
		2.79 g/l at pH 7
		213 g/l at pH 9
Partition coefficient n-octanol/water	Tribenuron-methyl	: log K_{ow} = 2.3 at pH 1.5 log K_{ow} = 2.25 at pH 4.0 log K_{ow} = 2.0 at pH 5.0 log K_{ow} = 1.25 at pH 6.0 log K_{ow} = -0.44 at pH 7.0
	Chlorsulfuron	: log K_{ow} = -0.99 at pH 7
	Metsulfuron-methyl	: log K_{ow} = -1.7 at pH 7 and 25°C
Autoignition temperature	Not determined	
Decomposition temperature	Tribenuron-methyl	: 137.5 ± 0.5 °C
Viscosity	Not determined	
Explosive properties	Not explosive	
Oxidising properties	Not oxidising	
9.2. Other information	No more relevant information is available.	

♣ 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 toxicological effects** * = Based on available data, the classification criteria are not met.

Product

Acute toxicity	The product is not expected to be 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 ₅₀ , oral, rat: > 2000 mg/kg
	- skin	LD ₅₀ , dermal, rat: > 2000 mg/kg
	- inhalation	LC ₅₀ , inhalation, rat: > 5 mg/l/4 h

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Skin corrosion/irritation	Not expected to be irritating to skin. *
Serious eye damage/irritation	Expected to be irritating to eyes.
Respiratory or skin sensitisation ...	Possibly a skin sensitizer.
Germ cell mutagenicity	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 tribenuron-methyl: Target organ: liver LOEL: 300 mg/kg bw/day in a 90-day rat study (method OECD 407). At this exposure, increased liver weight and serum ALT levels were found. *
Aspiration hazard	The product contains no ingredients known to present an aspiration pneumonia hazard. *
Symptoms and effects, acute and delayed	Irritation and allergic reactions.
<u><i>Tribenuron-methyl</i></u> Toxicokinetics, metabolism and distribution	Tribenuron-methyl is rapidly absorbed after oral intake, widely distributed in the body and extensively metabolised. Excretion is rapid, within a few days. No indication of bioaccumulation is found.
Acute toxicity	The substance 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 measured as:
Route(s) of entry	
- ingestion	LD ₅₀ , oral, rat: > 5000 mg/kg (method OECD 425)
- skin	LD ₅₀ , dermal, rat: > 5000 mg/kg (method OECD 402)
- inhalation	LC ₅₀ , inhalation, rat: > 5.14 mg/l/4 h (method OECD 403)
Skin corrosion/irritation	The substance may be slightly irritating to skin (method OECD 404). *
Serious eye damage/irritation	The substance may be mildly irritating to eyes (method OECD 405). *
Respiratory or skin sensitisation ...	The substance was found to be a weak sensitiser in guinea pigs (method OECD 406). It was not sensitizing in the Local Lymph Node Assay (method OECD 429).

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Chlorsulfuron

Toxicokinetics, metabolism and distribution

Chlorsulfuron is rapidly absorbed and excreted following oral administration. It is widely distributed in tissue. It is excreted mostly unchanged. There is no evidence for accumulation.

Acute toxicity

The substance is not harmful by inhalation, in contact with skin or if swallowed. * The acute toxicity is measured as:

Route(s) of entry - ingestion

LD₅₀, oral, rat (male): 5545 mg/kg (method EU B.1)

LD₅₀, oral, rat (female): 6293 mg/kg

- skin

LD₅₀, dermal, rat: > 3400 mg/kg (method EU B.3)

- inhalation

LC₅₀, inhalation, rat: > 5.2 mg/l/4 h (method OECD 403)

Skin corrosion/irritation

The substance is not irritating to skin (method EU B.4). *

Serious eye damage/irritation

The substance may be slightly irritating to eyes (method EU B.5). *

Respiratory or skin sensitisation ...

The substance was not sensitising to guinea pigs (method EU B.6). *

Metsulfuron-methyl

Toxicokinetics, metabolism and distribution

Metsulfuron-methyl is rapidly absorbed after oral intake. It is widely distributed in the body. It is partially metabolised. Excretion is rapid, within a few days. No indication of bioaccumulation is found.

Acute toxicity

The substance 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 measured as:

Route(s) of entry - ingestion

LD₅₀, oral, rat: > 5000 mg/kg (method 40 CFR 163-81-1)

- skin

LD₅₀, dermal, rabbit: > 2000 mg/kg (method 40 CFR 163-81-2)

- inhalation

LC₅₀, inhalation, rat: > 5.0 mg/l/4 h (method EEC B2)

Skin corrosion/irritation

Not irritating to skin (method FIFRA 81.5). *

Serious eye damage/irritation

The substance may be mildly irritating to eyes (method FIFRA 81.4). *

Respiratory or skin sensitisation ...

The substance was not a sensitizer to guinea pigs (method OECD 406). *

Sodium carbonate

Toxicokinetics, metabolism and distribution

Both sodium and carbonate ions are normal constituents in the body and regulated between narrow ranges. These ranges will not be exceeded, except locally in unusual situations such as accidents.

Acute toxicity

The substance is not considered to be harmful by ingestion, inhalation or in contact with skin. *

Route(s) of entry - ingestion

LD₅₀, oral, rat: 2800 mg/kg

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- skin	LD ₅₀ , dermal, rabbit: > 2000 mg/kg
- inhalation	LC ₅₀ , inhalation, rat: not available
Skin corrosion/irritation	Not irritating to skin (method OECD 404). *
Serious eye damage/irritation	Several tests have been performed with varying results. The weight of evidence is that the substance is irritating to eyes.
Respiratory or skin sensitisation ...	To our knowledge, no indications of allergenic effects have been reported. *
<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 ₅₀ , oral, rat: not available
- skin	LD ₅₀ , dermal, rat: not available
- inhalation	LC ₅₀ , inhalation, rat: not available
Serious eye damage/irritation	Causes serious eye irritation.

♣ SECTION 12: ECOLOGICAL INFORMATION

12.1. **Toxicity** The product is very toxic to algae and aquatic plants. It is considered as non-toxic to fish, aquatic invertebrates, soil micro- and macroorganisms, birds, mammals and insects.

The ecotoxicity of **tribenuron-methyl** is measured as:

- Fish	Rainbow trout (<i>Salmo gairdneri</i>)	96-h LC ₅₀ : > 1000 mg/l 21-day NOEC: 560 mg/l
- Invertebrates	Daphnids (<i>Daphnia magna</i>)	48-h EC ₅₀ : 720 mg/l 21-day NOEC: 120 mg/l
- Algae	Green algae (<i>Selenastrum capricornutum</i>)	72-h EC ₅₀ : 8.0 mg/l
- Plants	Duckweed (<i>Lemna minor</i>)	14-day EC ₅₀ : 9.9 µg/l
- Earthworms	<i>Eisenia foetida foetida</i>	14-day LC ₅₀ : > 1299 mg/kg soil
- Birds	Bobwhite quail (<i>Colinus virginianus</i>)	LD ₅₀ : > 2250 mg/kg dietary LD ₅₀ : > 5620 ppm
- Insects	Bees	48-h LD ₅₀ , contact: > 100 µg/bee 48-h LD ₅₀ , oral: > 9.1 µg/bee

The ecotoxicity of **chlorsulfuron** is measured to be:

- Fish	Rainbow trout (<i>Oncorhynchus mykiss</i>)	96-h LC ₅₀ : > 250 mg/l NOEC: 32 mg/l
- Invertebrates	Daphnids (<i>Daphnia magna</i>)	48-h EC ₅₀ : > 370 mg/l

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		NOEC: 20 mg/l
- Algae	Green algae (<i>Pseudokirchneriella subcapitata</i>) ...	EC ₅₀ : 0.055 µg/l
	Cyanobacteria (<i>Anabaena flos-aquae</i>)	EC ₅₀ : 0.61 mg/l
- Plants	Duckweed (<i>Lemna minor</i>)	EC ₅₀ : 0.35 µg/l
- Birds	Mallard duck (<i>Anas platyrhynchos</i>)	Dietary LC ₅₀ : > 5000 ppm
- Insects	Bees (<i>Apis mellifera</i>)	LD ₅₀ : 25 µg/bee

The measured ecotoxicity of **metsulfuron-methyl** is:

- Fish	Rainbow trout (<i>Salmo gairdneri</i>)	96-h LC ₅₀ : > 150 mg/l 21-day NOEC: 68 mg/l
- Invertebrates	Daphnids (<i>Daphnia magna</i>)	48-h LC ₅₀ : > 150 mg/l 21-day NOEC: 150 mg/l
- Algae	Green algae (<i>Selenastrum capricornutum</i>)	72-h IC ₅₀ : 0.045 mg/l
- Aquatic plants	Duckweed (<i>Lemna gibba</i>)	EC ₅₀ : 0.36 µg/l
- Earthworms	<i>Eisenia foetida foetida</i>	LC ₅₀ : > 1000 mg/kg dry soil
- Birds	Mallard duck	LD ₅₀ : > 2510 mg/kg
- Insects	Bees	LD ₅₀ , contact: > 25 µg/bee LD ₅₀ , oral: > 44.3 µg/bee

12.2. Persistence and degradability

Tribenuron-methyl is not persistent in the environment. Primary degradation half-lives vary with circumstances, from a few days to a few weeks in aerobic water and soil. Its metabolites are considered as persistent.

Chlorsulfuron can be persistent in the environment. Primary degradation half-lives vary primarily with pH, from a few weeks to over one year in soil at high pH. The substance has the potential to leak to groundwater. Remains in soil may adversely influence plant reproduction.

Metsulfuron-methyl does not meet the criteria for being readily biodegradable. It is moderately persistent in the environment. Primary degradation half-lives vary with circumstances, from a few weeks to a few months in aerobic soil and water. Degradation occurs both by chemical hydrolysis and by microbiological degradation.

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 n-octanol/water partition coefficients.

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Due to high solubility in water, none of the active ingredients bioaccumulate.

12.4. **Mobility in soil**

Under normal conditions **tribenuron-methyl** is of high to intermediate mobility in soil.

Chlorsulfuron is moderately mobile in soil at low pH, but very mobile at high pH.

Under normal conditions **metsulfuron-methyl** is mobile in soil. It has a potential for leaching to groundwater.

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
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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.

Disposal of product

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

- 14.1. **UN number** 3077
- 14.2. **UN proper shipping name** Environmentally hazardous substance, solid, n.o.s. (tribenuron-methyl, chlorsulfuron, metsulfuron-methyl)
- 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 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** Seveso category (Dir. 2012/18/EU): dangerous for the environment.
 Young people under the age of 18 are not allowed to work with the substance.
- 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 Minor corrections only.
- List of abbreviations
- | | |
|------------------|--|
| ALT | Alanine transaminase |
| CAS | Chemical Abstracts Service |
| CFR | Code of Federal Regulations |
| Dir. | Directive |
| DNEL | Derived No Effect Level |
| EC | European Community |
| EC ₅₀ | 50% Effect Concentration |
| EINECS | European INventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| FIFRA | Federal Insecticide, Fungicide and Rodenticide Act |
| GHS | Globally Harmonized classification and labelling System of chemicals, Fifth revised edition 2013 |

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IBC	International Bulk Chemical code
IC ₅₀	50% Inhibition Concentration
ISO	International Organisation for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LC ₅₀	50% Lethal Concentration
LD ₅₀	50% Lethal Dose
LOEL	Lowest Observed Effect Level
MARPOL	Set of rules from the International Maritime Organisation (IMO) for prevention of sea pollution
NOEC	No Observed Effect Concentration
n.o.s.	Not otherwise specified
OECD	Organisation for Economic Cooperation and Development
PBT	Persistent, Bioaccumulative, Toxic
PNEC	Predicted No Effect Concentration
Reg.	Regulation
STOT	Specific Target Organ Toxicity
TWA	Time Weighted Average
vPvB	very Persistent, very Bioaccumulative
WHO	World Health Organisation

References Data on ingredients are available from published literature and can be found several places.

Method for classification Calculation rules

Used hazard statements
 H315 Cause skin irritation.
 H317 May cause an allergic skin reaction.
 H319 Causes serious eye irritation.
 H335 May cause respiratory irritation.
 H400 Very toxic to aquatic life.
 H410 Very toxic to aquatic life with long lasting effects.
 EUH401 To avoid risks to human health and the environment, comply with the instructions of use.

Advice on training This material should only be used by persons who are made aware of its hazardous properties and have been instructed in the required safety precautions.

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 Corporation / Cheminova A/S / GHB