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Signal word



Material group	17A/1710	Page 1 of 12
Product name	METSULFURON-METHYL 20 WG	
		April 2016
Safety data sheet according to EU Reg. 1907/2006 as amended		Supersedes November 2015

SAFETY DATA SHEET METSULFURON-METHYL 20 WG

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

SECTI	SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING				
1.1.	Product identifier	METSULFURON-METHYL 20 WG			
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 P.O. Box 9 DK-7620 Lemvig Denmark sds@cheminova.dk			
1.4.	Emergency telephone number	(+45) 97 83 53 53 (24 h; for emergencies only)			
SECTI	ON 2: HAZARDS IDENTIFICATION				
2.1.	Classification of the substance or mixture	Eye irritation: Category 2 (H319) 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	Primarily irritation.			
	Environmental hazards	The product is expected to be toxic to most plants.			
2.2.	Label elements According to EU Reg. 1272/2008 a Product identifier	Metsulfuron-methyl 20 WG			

Warning

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Other hazards	Excessive dust formation may pose a dust explosion hazard.
P501	Dispose of contents/container as hazardous waste.
P337+P313	If eye irritation persists: Get medical advice/attention.
	Remove contact lenses, if present and easy to do. Continue rinsing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes.
P280	Wear eye protection.
P273	Avoid release to the environment.
P264	Wash hands thoroughly after handling.
Precautionary statements	
E011401	the instructions of use.
Supplementary hazard statement EUH401	To avoid risks to human health and the environment, comply with
H410	Very toxic to aquatic life with long lasting effects.
H319	Causes serious eye irritation.
Hazard statements	

♣ SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Reg. no. 01-2119980591-31

2.3.

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 Metsulfuron-methyl CAS name	Content: 20% by weight Benzoic acid, 2-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]carbonyl]amino]sulfonyl]-, methyl ester
	CAS no IUPAC name	74223-64-6 Methyl 2-(4-methoxy-6-methyl-1,3,5-triazin-2-ylcarbamoyl-sulfamoyl)benzoate
	ISO name/EU name EC no. (EINECS no.) EU index no.	Metsulfuron-methyl None 613-139-00-2
	Classification of the ingredient	Hazards to the aquatic environment, acute: Category 1 (H400) chronic: Category 1 (H410)
	Structural formula	H ₃ CO O CH ₃

~/ ^	
S-N-C-N-	N
0 0 N-	- OCH₃

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

Reportable ingredients	Content (% w/w)	CAS no.	EC no. (EINECS no.)	Classification
Alkylated naphthalene sulfonate sodium salt	max. 4			Skin Irrit. 2 (H315) Eye Irrit. 2 (H319)
Aromatic hydrocarbons, C10-13, reaction products with branched nonene, sulfonated, sodium salts	max. 2	1258274-08-6	None	Skin Irrit. 2 (H315) Eye Dam. 1 (H318)

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Docusate sodium Reg. no. 01-2119491296-29 max. 2 577-11-7 209-406-4

Skin Irrit. 2 (H315) Eye Dam. 1 (H318)

SECTION 4: FIRST AID MEASURES

SECT	ION 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 flush skin with water while removing contaminated clothing and footwear. Wash with water and soap. See physician if irritation 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 persist.
	Ingestion	Inducing vomiting is not recommended. Rinse mouth and drink water or milk. If vomiting does occur, rinse mouth and drink fluids again. Consult a physician immediately.
4.2.	Most important symptoms and effects, both acute and delayed	Primarily irritation. Generally, sulphonylurea herbicides cause lethargy, confusion, dizziness, seizures and coma on ingestion of large quantities.
4.3.	Indication of any immediate	Immediate medical attention is required in case of ingestion
	medical attention and special treatment needed	It may be helpful to show this safety data sheet to physician.
	Notes to physician	A specific antidote against this substance is not known. Gastric lavage and/or administration of activated charcoal can be considered. Possible mucosal damage may contraindicate the use of gastric lavage.

SECTION 5: FIREFIGHTING 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 nitrogen oxides, sulphur dioxide, carbon monoxide and carbon dioxide.
5.3.	Advice for firefighters	Use water spray to keep fire-exposed containers cool. Approach

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 (not metal) 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 safety glasses, 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. Remove sources of ignition.

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 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 placed in 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 7.1. for fire prevention See subsection 8.2. for details of personal protection. See section 13 for disposal.

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.

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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. Otherwise the material should preferably be handled by mechanical means. 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. 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.

Store in closed, labelled containers (not metal). 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.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Personal exposure limits To our knowledge not established for the active substance or any

other ingredient 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.

Metsulfuron-methyl

0.010 μg/

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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 system 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.



Respiratory protection

The product is not likely to present an airborne exposure concern during normal handling, but in the event of a discharge of the material which produces a heavy vapour or dust, workers should put on officially approved face mask or 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.



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 appreciable 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 solid (granules)

Odour Faint, ester-like
Odour threshold Not determined

explosive limits Not determined

 $3.3 \times 10^{-10} \text{ Pa at } 25^{\circ}\text{C}$

Density: 0.5 - 0.7 (typically 0.6) g/cm³

n-hexane 0.584 mg/l

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ethyl acetate 11.1 g/l water 0.55 g/l at pH 5 2.79 g/l at pH 7

2.77 g/1 at pH 9

Partition coefficient n-octanol/water Metsulfuron-methyl : $\log K_{ow} = -1.7$ at pH 7 and 25°C

Autoignition temperature>400°C

Metsulfuron-methyl: starting from approx. 162°C

9.2. **Other information**

SECTION 10: STABILITY AND REACTIVITY

10.2. **Chemical stability** Stable at ambient temperatures.

10.3. **Possibility of hazardous reactions** An acid-base neutralisation reaction can be hazardous because of

heat release.

10.5. **Incompatible materials** Strong oxidising compounds and strong alkalis.

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 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: > 2000 mg/kg (method OECD 425)

- skin LD₅₀, dermal, rat: > 2000 mg/kg (method OECD 402)

- inhalation LC_{50} , inhalation, rat: > 4.97 mg/l/4 h (method OECD 403)

Skin corrosion/irritation The product is mildly irritating to skin (method OECD 404). *

Serious eye damage/irritation The product is moderately irritating to eyes (method OECD 405).

Respiratory or skin sensitisation ... The product is not a skin sensitizer (method OECD 429). *

Carcinogenicity The product contains no ingredients known to be carcinogenic. *

Reproductive toxicity The product contains no ingredients known to have adverse effects

on reproduction. *

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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 metsulfuron-methyl: NOEL: 84 mg/kg bw/day in a 90-day rat study. At higher exposure levels decrease of total serum protein was seen in females and of total leukocyte counts in males (method FIFRA 82.1). *		
Aspiration hazard	The product contains no ingredients known to present an aspiration pneumonia hazard. *		
Symptoms and effects, acute and delayed	Primarily irritation. To our knowledge, adverse effects in humans have not been reported. The product is not expected to cause severe adverse effects to health, but adverse health effects cannot be excluded in case of massive exposure. Generally, sulphonylurea herbicides cause lethargy, confusion, dizziness, seizures and coma on ingestion.		
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. * The acute toxicity is measured as:		
Route(s) of entry - ingestion	LD ₅₀ , oral, rat: > 5000 mg/kg (method 40 CFR 163-81-1)		
- skin	LD ₅₀ , dermal, rabbit: > 2000 mg/kg (method 40 CFR 163-81-2)		
- inhalation	LC ₅₀ , 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). *		
Alkylated naphthalene sulfonate so	The substance is not considered as harmful by single exposure. *		
Route(s) of entry - ingestion	LD ₅₀ , oral, rat: > 5000 mg/kg		
Skin corrosion/irritation	Irritating to skin.		
Serious eye damage/irritation	Irritating to eyes.		
STOT – single exposure	Inhalation of dust can cause irritation of airways. It is not clear if the criteria for classification are met.		
Aromatic hydrocarbons, C10-13, reaction products with branched nonene, sulfonated, sodium			
<u>salts</u>			
Acute toxicity	The substance is not considered as harmful by single exposure. *		

Acute toxicity

The substance is not considered as harmful by single exposure. $\ensuremath{^*}$

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Route(s) of entry - ingestion LD₅₀, oral, rat: 2000 - 5000 mg/kg (method OECD 401)

- skin LD₅₀, dermal, rat: > 2000 mg/kg (method similar to OECD 402)

Skin corrosion/irritation Irritating to skin (method OECD 404).

Serious eye damage/irritation Severely irritating to eyes (method OECD 437).

Respiratory or skin sensitisation ... Not sensitising to skin (method OECD 406). *

<u>Docusate sodium</u>

Acute toxicity The substance is not considered as harmful by ingestion, skin

contact and inhalation. * The acute toxicity is measured as:

 $Route(s) \ of \ entry \qquad \text{- ingestion} \qquad \qquad LD_{50}, \ oral, \ rat: \ > 2100 \ mg/kg \ (method \ OECD \ 401)$

- skin LD_{50} , dermal, rat: > 10000 mg/kg (method OECD 402)

- inhalation LC₅₀, inhalation, rat: approx. 20 mg/l/4 h

Skin corrosion/irritation Irritating to skin (method OECD 404).

Serious eye damage/irritation Severely irritating to eyes with the possibility to cause permanent

eye damage (method OECD 405).

Respiratory or skin sensitisation ... To our knowledge, no indications of allergenic properties have

been recorded. *

SECTION 12: ECOLOGICAL INFORMATION

12.1. **Toxicity** Th

The product is toxic to green algae and highly toxic to aquatic plants, but is considered as non-toxic to fish, aquatic invertebrates, soil micro- and macroorganisms, birds, mammals and insects.

The ecotoxicity of the product is measured as:

12.2. Persistence and degradability

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 coefficient.

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		Due to its high solubility in water, metsulfuron-methyl does not bioaccumulate. Bioconcentration factor is < 1 .
12.4.	Mobility in soil	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

DECI	BECTION 13: DIST OBILE CONSIDERATIONS	
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 of packaging It is recommended to consider possible ways of disposal in the following order:

disposal. Do not discharge to sewer systems.

- 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.

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. (metsulfuron-methyl)
14.3.	Transport hazard class(es)	9
14.4.	Packing group	III

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14.5. **Environmental hazards** Marine pollutant

14.6. Special precautions for user 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 should not be 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.

All ingredients are covered by EU chemical legislation.

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 CAS Chemical Abstracts Service

CFR Code of Federal Regulations

Dir. Directive

DNEL Derived No Effect Level EC **European Community** EC_{50} 50% Effect Concentration **EEC European Economic Community**

EINECS

European INventory of Existing Commercial Chemical

Substances

FIFRA Federal Insecticide, Fungicide and Rodenticide Act **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

50% Lethal Concentration LC_{50}

 LD_{50} 50% Lethal Dose

MARPOL Set of rules from the International Maritime

Organisation (IMO) for prevention of sea pollution

NOEL No Observed Effect Level Not otherwise specified n.o.s.

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 Weighed Average

vPvB very Persistent, very Bioaccumulative

WG Water dispersible granules WHO World Health Organisation

References Data measured on the product are unpublished company data. Data

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	on ingredients are available from published literature and can be found several places.	
Method for classification	Test data	
Used hazard statements	H315 H318 H319 H400 H410 EUH401	Causes skin irritation. Causes serious eye damage. Causes serious eye irritation. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects. 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 Cheminova A/S may exist. The user has to check the validity of the information under local circumstances.

Prepared by: Cheminova A/S / GHB