

<p style="text-align: center;">MONSANTO Europe S.A. Safety Data Sheet Commercial Product</p>

1. PRODUCT AND COMPANY IDENTIFICATION

Product name

Monitor®

Product use

Herbicide

Chemical name

Not applicable.

Synonyms

None.

Company/(Sales office)

MONSANTO Europe S.A.
Haven 627, Scheldelaan 460, B-2040
Antwerp, Belgium

Telephone: +32 (0)3 568 51 11

Fax: +32 (0)3 568 50 90

E-mail:

TS-SAFETYDATASHEET@DOMINO.MONSANTO.COM

Emergency numbers

Telephone: Belgium +32 (0)3 568 51 23

2. HAZARDS IDENTIFICATION

EU label (manufacturer self-classification) - Classification following the EU Dangerous Preparations' Directive 1999/45/EC.

N - Dangerous for the environment

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

National classification - U.K.

N - Dangerous for the environment

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Potential health effects

Likely routes of exposure

Skin contact

Eye contact, short term

Not expected to produce significant adverse eye effects as contact with the granule is unlikely when recommended use instructions are followed.

Skin contact, short term

Not expected to produce significant adverse effects when recommended use instructions are followed.

Inhalation, short term

Not expected to produce significant adverse effects when recommended use instructions are followed.

Potential environmental effects

Very toxic to aquatic organisms.

May cause long-term adverse effects in the aquatic environment.

Potential other effects

Risk of dust explosion.

Refer to section 11 for toxicological and section 12 for environmental information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Active ingredient

N-[[[(4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]-2-(ethylsulfonyl)imidazo[1,2-a]pyridine-3-sulfonamide;
{Sulfosulfuron}

Composition

Components	CAS No.	EINECS/ ELINCS No.	% by weight (approximate)	EU Symbols & R phrases of components
Sulfosulfuron	141776-32-1		80	N; R50/53; {b}
Inert carrier			11	
Minor formulating ingredients			9	

4. FIRST AID MEASURES

Use personal protection recommended in section 8.

Eye contact

Immediately flush with plenty of water.
If easy to do, remove contact lenses.

Skin contact

Wash affected skin with plenty of water.
Use soap if available.
Take off contaminated clothing, wristwatch, jewellery.
Wash clothes and clean shoes before re-use.

Inhalation

Remove to fresh air.

Ingestion

Rinse mouth thoroughly with water.
Remove particles from mouth.
Immediately offer water to drink.
Do NOT induce vomiting unless directed by medical personnel.
If symptoms occur, get medical attention.

5. FIRE-FIGHTING MEASURES

Flash point

Not applicable.

Extinguishing media

Recommended: Water, foam, dry chemical, carbon dioxide (CO₂)

Unusual fire and explosion hazards

If this material is milled or the process generates fines, the fines could form an explosive mixture if dispersed in a sufficient quantity of air.
Minimise use of water to prevent environmental contamination.
Environmental precautions: see section 6.

Hazardous products of combustion

Carbon monoxide (CO), sulphur oxides (SO_x), hydrogen chloride (HCl), nitrogen oxides (NO_x), ammonia (NH₃)

Fire fighting equipment

Self-contained breathing apparatus.
Equipment should be thoroughly decontaminated after use.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protection recommended in section 8.

Environmental precautions

Minimise spread.
Keep out of drains, sewers, ditches and water ways.
Consult an expert immediately.
Notify authorities.

Methods for cleaning up

Use vacuum equipment designed specifically for combustible dust.
Dig up heavily contaminated soil.
Collect in containers for disposal.
Flush residues with small quantities of water.
Minimise use of water to prevent environmental contamination.

Refer to section 13 for disposal of spilled material.

Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

7. HANDLING AND STORAGE

Good industrial practice in housekeeping and personal hygiene should be followed.

Handling

When using do not eat, drink or smoke.
Wash hands thoroughly after handling or contact.
Wash contaminated clothing before re-use.
Thoroughly clean equipment after use.
Emptied packages retain product residue and dust.
Do not contaminate drains, sewers and water ways when disposing of equipment rinse water.
Refer to section 13 of the safety data sheet for disposal of rinse water.
Dust generated during handling and/or storage can form explosive mixtures in air.
Observe all labelled safeguards until container is cleaned, reconditioned or destroyed.

Storage

Maximum storage temperature: 54 °C
Keep out of reach of children.
Keep away from food, drink and animal feed.
Keep only in the original container.
Use appropriate containment to avoid environmental contamination.
Keep container off wet floors.
Minimum shelf life: 2 years.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne exposure limits

Components	Exposure Guidelines
Sulfosulfuron	No specific occupational exposure limit has been established.
Inert carrier	No specific occupational exposure limit has been established.
Minor formulating ingredients	No specific occupational exposure limit has been established.

Engineering controls

No special requirement when used as recommended.

Eye protection

No special requirement when used as recommended.

Skin protection

If repeated or prolonged contact:
Wear chemical resistant gloves.

Respiratory protection

No special requirement when used as recommended.

When recommended, consult manufacturer of personal protective equipment for the appropriate type of equipment for a given application.

9. PHYSICAL AND CHEMICAL PROPERTIES

These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

Colour/colour range:	Whitish
Odour:	Odourless
Form:	Granules, (free-flowing)
Physical form changes (melting, boiling, etc.):	
Melting point:	No data.
Boiling point:	Not applicable.
Flash point:	Not applicable.
Explosive properties:	No explosive properties
Auto ignition temperature:	Does not self-ignite.
Specific gravity:	Not applicable.
Particle size:	> 99.5 % Mesh size 40
Vapour pressure:	No significant volatility.
Vapour density:	Not applicable.
Evaporation rate:	No data.
Dynamic viscosity:	Not applicable.
Kinematic viscosity:	Not applicable.
Density:	0.55 g/cm ³ ; (pour density)
Solubility:	Water: Completely miscible.
pH:	5.5 @ 20 °C @ 10 g/l
Partition coefficient:	log Pow: < 1 (sulfosulfuron)

10. STABILITY AND REACTIVITY**Stability**

Stable under normal conditions of handling and storage.

Oxidizing properties

none

Hazardous decomposition

Thermal decomposition: Hazardous products of combustion: see section 5.

Self-accelerating decomposition temperature (SADT)

No data.

Hazardous polymerization

Does not occur.

11. TOXICOLOGICAL INFORMATION

This section is intended for use by toxicologists and other health professionals.

Monsanto has not conducted toxicity studies on this product. Data obtained on similar products and on components are summarized below.

Similar formulation

Acute oral toxicity

Rat, LD50: > 5,000 mg/kg body weight
No mortality.

Acute dermal toxicity

Rat, LD50: > 5,000 mg/kg body weight
Other effects: none
No mortality.

Skin irritation

Rabbit, 6 animals, OECD 404 test:
Redness, mean EU score: 0.1
Swelling, mean EU score: 0.00
Days to heal: 2

Eye irritation

Rabbit, 6 animals, OECD 405 test:
Conjunctival redness, mean EU score: 0.3
Conjunctival swelling, mean EU score: 0.00
Corneal opacity, mean EU score: 0.00
Iris lesions, mean EU score: 0.00
Days to heal: 3

Acute inhalation toxicity

Rat, LC50, 4 hours, dust: > 3.2 mg/L
Other effects: none
No mortality.

Skin sensitization

Guinea pig, maximisation test:
Positive incidence: 0 %

Active ingredient

Mutagenicity

In vitro and in vivo mutagenicity test(s):
Not mutagenic.

Repeated dose toxicity

Rat, oral, 90 days:
NOAEL toxicity: 6,000 mg/kg diet
Other effects: weight loss

Mouse, oral, 90 days:
NOAEL toxicity: > 7,000 mg/kg diet
Other effects: none

Chronic effects/carcinogenicity

Mouse, oral, 18 months:
NOAEL toxicity: 700 mg/kg diet
Target organs/systems: urinary bladder
Other effects: histopathologic effects, blood biochemistry effects
NOEL tumour: 3,000 mg/kg diet
Tumours: urinary bladder
Tumours not relevant to man.

Rat, oral, 22 months:
NOAEL toxicity: 500 mg/kg diet
Target organs/systems: urethra, urinary bladder, kidneys
Other effects: organ weight change, histopathologic effects, increased mortality
NOEL tumour: 500 mg/kg diet
Tumours: urinary bladder, (carcinoma)
Tumours: urinary bladder, (papilloma)

Tumours not relevant to man.

Toxicity to reproduction/fertility

Rat, oral, 2 generations:

NOAEL toxicity: 5,000 mg/kg diet

NOAEL reproduction: 20,000 mg/kg diet

Target organs/systems in parents: kidneys

Other effects in parents: weight loss, decrease of body weight gain, organ weight change

Target organs/systems in pups: none

Other effects in pups: none

Developmental toxicity/teratogenicity

Rat, oral, 6 - 15 days of gestation:

NOAEL toxicity: 1,000 mg/kg body weight/day

NOAEL development: 1,000 mg/kg body weight/day

Target organs/systems in mother animal: none

Other effects in mother animal: none

Developmental effects: none

No adverse treatment related effects in offspring.

Rabbit, oral, 7 - 18 days of gestation:

NOAEL toxicity: 1,000 mg/kg body weight/day

NOAEL development: 1,000 mg/kg body weight/day

Target organs/systems in mother animal: none

Other effects in mother animal: none

Developmental effects: none

12. ECOLOGICAL INFORMATION

This section is intended for use by ecotoxicologists and other environmental specialists.

Data obtained on similar products and on components are summarized below.

Similar formulation

Aquatic toxicity, fish

Rainbow trout (*Oncorhynchus mykiss*):

Acute toxicity (limit test), 96 hours, static, LC50: > 97 mg/L

Aquatic toxicity, invertebrates

Water flea (*Daphnia magna*):

Acute toxicity (limit test), 48 hours, static, EC50: > 101 mg/L

Similar formulation

Aquatic toxicity, algae/aquatic plants

Green algae (*Selenastrum capricornutum*):

Acute toxicity, 72 hours, static, ErC50 (growth rate): 0.62 mg/L

Similar formulation

Arthropod toxicity

Honey bee (*Apis mellifera*):

Oral/contact, 48 hours, LD50: > 26.5 µg/bee

Active ingredient

Avian toxicity

Bobwhite quail (*Colinus virginianus*):

Dietary toxicity, 5 days, LC50: > 5,620 mg/kg diet

Mallard duck (*Anas platyrhynchos*):

Dietary toxicity, 5 days, LC50: > 5,620 mg/kg diet

Bobwhite quail (*Colinus virginianus*):

Acute oral toxicity, single dose, LD50: > 2,250 mg/kg body weight

Mallard duck (*Anas platyrhynchos*):

Acute oral toxicity, single dose, LD50: > 2,250 mg/kg body weight

Soil organism toxicity, invertebrates

Earthworm (*Eisenia foetida*):

Acute toxicity (limit test), 14 days, LC50: > 848 mg/kg dry soil

Bioaccumulation

No significant bioaccumulation is expected.

Dissipation

Soil, field:

Half life: 11 - 47 days

Water, aerobic:

Half life: 16 - 20 days

13. DISPOSAL CONSIDERATIONS

Product

- Send to special chemical waste disposal facility.
- Burn in special, controlled high temperature incinerator.
- Recycle if appropriate facilities/equipment available.
- Keep out of drains, sewers, ditches and water ways.
- Follow all local/regional/national/international regulations.

Container

- Empty packaging completely.
- Ensure packaging cannot be reused.
- Store for collection by approved waste disposal service.
- Dispose of as hazardous industrial waste.
- Burn in special, controlled high temperature incinerator.
- Observe all labelled safeguards until container is cleaned, reconditioned or destroyed.
- Follow all local/regional/national/international regulations.

Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

14. TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

ADR/RID

|| ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. , (sulfosulfuron)
|| UN No.: UN3077
|| Class: 9
|| Kemler: 90
|| Packing Group: III

IMO

|| ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. , (sulfosulfuron)
|| UN No.: UN3077
|| Class: 9
|| Packing Group: III

|| MARINE POLLUTANT

IATA/ICAO

|| ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. , (sulfosulfuron)
|| UN No.: UN3077
|| Class: 9
|| Packing Group: III

|| MARINE POLLUTANT

15. REGULATORY INFORMATION

EU label (manufacturer self-classification) - Classification following the EU Dangerous Preparations' Directive 1999/45/EC.

N - Dangerous for the environment

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S35 This material and its container must be disposed of in a safe way.

S57 Use appropriate containment to avoid environmental contamination.

National classification - U.K.

N - Dangerous for the environment

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S35 This material and its container must be disposed of in a safe way.

S57 Use appropriate containment to avoid environmental contamination.

16. OTHER INFORMATION

The information given here is not necessarily exhaustive but is representative of relevant, reliable data.

Follow all local/regional/national/international regulations.

Please consult supplier if further information is needed.

This Safety Data Sheet has been prepared following the EU Directive 91/155/EEC as last amended by EU Directive 2001/58/EC and according to EU Regulation 1907/2006.

In this document the British spelling was applied.

® Registered trademark.

|| Significant changes versus previous edition.

EU Symbols & R phrases of components

Components	EU Symbols & R phrases of components
Sulfosulfuron	N - Dangerous for the environment R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Inert carrier	
Minor formulating ingredients	

Endnotes:

{a} EU label (manufacturer self-classification)

{b} EU label (Annex I)

{c} National classification

Full denomination of most frequently used acronyms. BCF (Bioconcentration Factor), BOD (Biochemical Oxygen Demand), COD (Chemical Oxygen Demand), EC50 (50% effect concentration), ED50 (50% effect dose), I.M. (intramuscular), I.P. (intraperitoneal), I.V. (intravenous), Koc (Soil adsorption coefficient), LC50 (50% lethality concentration), LD50 (50% lethality dose), LDLo (Lower limit of lethal dosage), LEL (Lower Explosion Limit), LOAEC (Lowest Observed Adverse Effect Concentration), LOAEL (Lowest Observed Adverse Effect Level), LOEC (Lowest Observed Effect Concentration), LOEL (Lowest Observed Effect Level), MEL (Maximum Exposure limit), MTD (Maximum Tolerated Dose), NOAEC (No Observed Adverse Effect Concentration), NOAEL (No Observed Adverse Effect Level), NOEC (No Observed Effect Concentration), NOEL (No Observed Effect Level), OEL (Occupational Exposure Limit), PEL (Permissible Exposure Limit), PII (Primary Irritation Index), Pow (Partition coefficient n-octanol/water), S.C. (subcutaneous), STEL (Short-Term Exposure Limit), TLV-C (Threshold Limit Value-Ceiling), TLV-TWA (Threshold Limit Value - Time Weighted Average), UEL (Upper Explosion Limit)

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, MONSANTO Company or any of its subsidiaries makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for the purposes prior to use. In no event will MONSANTO Company or any of its subsidiaries be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR TO THE PRODUCT TO WHICH INFORMATION REFERS.