



MONOLITH

Version 3 / IRL
102000027072

1/12

Revision Date: 09.02.2018
Print Date: 19.02.2018

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

1.1 Product identifier

Trade name MONOLITH
Product code (UVP) 80886306

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

Use Herbicide

1.3 Details of the supplier of the safety data sheet

Supplier Bayer CropScience Ltd
Bayer Ltd
The Atrium, Blackthorn Road
Sandyford
Dublin 18
Ireland

Telephone +353-1-2999313

Responsible Department Email: ukinfo@bayercropscience.com

1.4 Emergency telephone no.

Emergency telephone no. 00800 1020 3333 (24 hr)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.

Eye irritation: Category 2

H319 Causes serious eye irritation.

Acute aquatic toxicity: Category 1

H400 Very toxic to aquatic life.

Chronic aquatic toxicity: Category 1

H410 Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.

Hazard label for supply/use required.

Hazardous components which must be listed on the label:

- Mesosulfuron-methyl
- Propoxycarbazone-sodium
- Mefenpyr-diethyl

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**Signal word:** Warning**Hazard statements**

H319 Causes serious eye irritation.
 H410 Very toxic to aquatic life with long lasting effects.
 EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

Precautionary statements

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
 P305 + P351 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 + P338
 P337 + P313 If eye irritation persists: Get medical advice/ attention.
 P501 Dispose of contents/container to a licensed hazardous waste disposal contractor or collection site, except for triple rinsed empty containers which can be disposed of as non-hazardous waste.

2.3 Other hazards

No other hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.2 Mixtures****Chemical nature**

Water dispersible granules (WG)

Mesosulfuron-methyl/Propoxycarbazone-sodium/Mefenpyr-diethyl 4,5:6,75:9,0 %

Hazardous components

Hazard statements according to Regulation (EC) No. 1272/2008

Name	CAS-No. / EC-No. / REACH Reg. No.	Classification	Conc. [%]
		REGULATION (EC) No 1272/2008	
Mesosulfuron-methyl	208465-21-8	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	4.5
Propoxycarbazone-sodium	181274-15-7	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	6.75
Mefenpyr-diethyl	135590-91-9	Aquatic Chronic 2, H411	9.0
Solvent Naphtha (petroleum), heavy aromatic, <1% naphthalene	64742-94-5 265-198-5 01-2119451097-39-xxxx	Asp. Tox. 1, H304 Aquatic Chronic 2, H411	> 10 – < 25
Sulfonated aromatic polymer, sodium salt	68425-94-5	Eye Irrit. 2, H319	> 1 – < 10
Dodecyl benzene sulphonate, calcium salt	26264-06-2 247-557-8	Skin Irrit. 2, H315 Eye Dam. 1, H318	> 1 – < 3

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Kaolin	1332-58-7 310-194-1	Not classified	> 1
Silica, amorphe	7631-86-9 231-545-4 01-2119379499-16-XXXX	Not classified	> 1
Perlite	93763-70-3	Not classified	>= 1

Further information

Mesosulfuron-methyl	208465-21-8	M-Factor: 100 (acute), 100 (chronic)
Propoxycarbazone-sodium	181274-15-7	M-Factor: 10 (acute), 10 (chronic)

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES**4.1 Description of first aid measures****General advice**

Move out of dangerous area. Place and transport victim in stable position (lying sideways). Remove contaminated clothing immediately and dispose of safely.

Inhalation

Move to fresh air. Keep patient warm and at rest. Call a physician or poison control center immediately.

Skin contact

Wash off thoroughly with plenty of soap and water, if available with polyethyleneglycol 400, subsequently rinse with water. If symptoms persist, call a physician.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. If eye irritation or redness persists, see an ophthalmologist.

Ingestion

Rinse mouth. Do NOT induce vomiting. Call a physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed**Symptoms**

No symptoms known or expected.

4.3 Indication of any immediate medical attention and special treatment needed**Treatment**

Treat symptomatically. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. There is no specific antidote.



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SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable High volume water jet

5.2 Special hazards arising from the substance or mixture In the event of fire the following may be released: Hydrogen cyanide (hydrocyanic acid), Hydrogen chloride (HCl), Carbon monoxide (CO), Carbon dioxide (CO₂), Nitrogen oxides (NO_x), Sulphur oxides

5.3 Advice for firefighters

Special protective equipment for firefighters In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.

Further information Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Precautions Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment.

6.2 Environmental precautions Do not allow to get into surface water, drains and ground water.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up Use mechanical handling equipment. Clean contaminated floors and objects thoroughly, observing environmental regulations. Keep in suitable, closed containers for disposal.

Additional advice Check also for any local site procedures.

6.4 Reference to other sections Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling Use only in area provided with appropriate exhaust ventilation.

Advice on protection against fire and explosion Keep away from heat and sources of ignition.

Hygiene measures Avoid contact with skin, eyes and clothing. Keep working clothes separately. Wash hands before breaks and immediately after handling

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the product. Remove soiled clothing immediately and clean thoroughly before using again. Garments that cannot be cleaned must be destroyed (burnt).

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Keep containers tightly closed in a dry, cool and well-ventilated place. Store in original container. Store in a place accessible by authorized persons only. Keep away from direct sunlight. Protect from frost.

Advice on common storage Keep away from food, drink and animal feedingstuffs.

7.3 Specific end use(s) Refer to the label and/or leaflet.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control parameters**

Components	CAS-No.	Control parameters	Update	Basis
Mesosulfuron-methyl	208465-21-8	10 mg/m ³ (TWA)		OES BCS*
Propoxycarbazone-sodium	181274-15-7	10 mg/m ³ (TWA)		OES BCS*
Mefenpyr-diethyl	135590-91-9	10 mg/m ³ (TWA)		OES BCS*
Silica, amorphe (Total inhalable dust.)	7631-86-9	6 mg/m ³ (TWA)	2011	ELV (IE)
Silica, amorphe (Respirable dust.)	7631-86-9	2.4 mg/m ³ (TWA)	2011	ELV (IE)
Kaolin (Respirable dust.)	1332-58-7	2.0 mg/m ³ (TWA)	2011	ELV (IE)
Perlite (Respirable dust.)	93763-70-3	4 mg/m ³ (TWA)	2016	ELV (IE)
Perlite (Total inhalable dust.)	93763-70-3	10 mg/m ³ (TWA)	2016	ELV (IE)

*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

8.2 Exposure controls**Personal protective equipment**

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection

Respiratory protection is not required under anticipated circumstances of exposure.

Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.

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Wear respirator with a particle filter mask (protection factor 4) conforming to European norm EN149FFP1 or equivalent.

Hand protection

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.

Material	Nitrile rubber
Rate of permeability	> 480 min
Glove thickness	> 0.4 mm
Protective index	Class 6
Directive	Protective gloves complying with EN 374.

Eye protection

Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).

Skin and body protection

Wear standard coveralls and Category 3 Type 5 suit. If there is a risk of significant exposure, consider a higher protective type suit.

Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

Form	water-dispersible granules
Colour	beige to brown
Odour	aromatic
pH	8.0 - 10.0 at 10 % (23 °C) (deionized water)
Flammability (solid, gas)	The product is not highly flammable.
Auto-ignition temperature	368 °C
Bulk density	598 - 702 kg/m ³
Water solubility	dispersible
Partition coefficient: n-octanol/water	Mesosulfuron-methyl: log Pow: -0.48 Propoxycarbazone-sodium: log Pow: -1.55 Mefenpyr-diethyl: log Pow: 3.83 at 21 °C
Oxidizing properties	No oxidizing properties
Explosivity	Not explosive 92/69/EEC, A.14 / OECD 113
Dust content	nearly dust-free



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9.2 Other information Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Thermal decomposition Stable under normal conditions.

10.2 Chemical stability Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions No hazardous reactions when stored and handled according to prescribed instructions.

10.4 Conditions to avoid Extremes of temperature and direct sunlight.

10.5 Incompatible materials Store only in the original container.

10.6 Hazardous decomposition products No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity LD50 (Rat) > 2,000 mg/kg
Test conducted with a similar formulation.

Acute inhalation toxicity LC50 (Rat) > 0.995 mg/l
Exposure time: 4 h
Determined in the form of a respirable aerosol.
Highest attainable concentration.
Test conducted with a similar formulation.

Acute dermal toxicity LD50 (Rat) > 2,000 mg/kg
Test conducted with a similar formulation.

Skin irritation No skin irritation (Rabbit)
Test conducted with a similar formulation.

Eye irritation Severe eye irritation. (Rabbit)
Test conducted with a similar formulation.

Sensitisation Non-sensitizing. (Mouse)
OECD Test Guideline 429, local lymph node assay (LLNA)

Assessment STOT Specific target organ toxicity – single exposure

Mesosulfuron-methyl: Based on available data, the classification criteria are not met.
Propoxycarbazone-sodium: Based on available data, the classification criteria are not met.
Mefenpyr-diethyl: Based on available data, the classification criteria are not met.

Assessment STOT Specific target organ toxicity – repeated exposure

Mesosulfuron-methyl did not cause specific target organ toxicity in experimental animal studies.
Propoxycarbazone-sodium did not cause specific target organ toxicity in experimental animal studies.
Mefenpyr-diethyl did not cause specific target organ toxicity in experimental animal studies.

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Assessment mutagenicity

Mesosulfuron-methyl was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Propoxycarbazine-sodium was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Mefenpyr-diethyl was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment carcinogenicity

Mesosulfuron-methyl was not carcinogenic in lifetime feeding studies in rats and mice.
Propoxycarbazine-sodium was not carcinogenic in lifetime feeding studies in rats and mice.
Mefenpyr-diethyl was not carcinogenic in lifetime feeding studies in rats and mice.

Assessment toxicity to reproduction

Mesosulfuron-methyl did not cause reproductive toxicity in a two-generation study in rats.
Propoxycarbazine-sodium did not cause reproductive toxicity in a two-generation study in rats.
Mefenpyr-diethyl did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Mesosulfuron-methyl did not cause developmental toxicity in rats and rabbits.
Propoxycarbazine-sodium did not cause developmental toxicity in rats. Propoxycarbazine-sodium caused developmental toxicity in rabbits only at dose levels toxic to the dams. The developmental effects seen with Propoxycarbazine-sodium are related to maternal toxicity.
Mefenpyr-diethyl caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Mefenpyr-diethyl are related to maternal toxicity.

Aspiration hazard

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

SECTION 12: ECOLOGICAL INFORMATION**12.1 Toxicity**

Toxicity to fish	LC50 (Oncorhynchus mykiss (rainbow trout)) 7.6 mg/l Exposure time: 96 h Test conducted with a similar formulation.
Toxicity to aquatic invertebrates	EC50 (Daphnia magna (Water flea)) 8.8 mg/l Exposure time: 48 h Test conducted with a similar formulation.
Toxicity to aquatic plants	IC50 (Raphidocelis subcapitata (freshwater green alga)) 3.88 mg/l Growth rate; Exposure time: 72 h Test conducted with a similar formulation. IC50 (Lemna gibba (gibbous duckweed)) 0.0201 mg/l Growth rate; Exposure time: 7 d

12.2 Persistence and degradability

Biodegradability	Mesosulfuron-methyl: Not rapidly biodegradable Propoxycarbazine-sodium: Not rapidly biodegradable Mefenpyr-diethyl: Not rapidly biodegradable
Koc	Mesosulfuron-methyl: Koc: 92



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Propoxycarbazone-sodium: Koc: 29
Mefenpyr-diethyl: Koc: 625

12.3 Bioaccumulative potential

Bioaccumulation Mesosulfuron-methyl:
Does not bioaccumulate.
Propoxycarbazone-sodium:
Does not bioaccumulate.
Mefenpyr-diethyl: Bioconcentration factor (BCF) 232
Does not bioaccumulate.

12.4 Mobility in soil

Mobility in soil Mesosulfuron-methyl: Moderately mobile in soils
Propoxycarbazone-sodium: Mobile in soils
Mefenpyr-diethyl: Slightly mobile in soils

12.5 Results of PBT and vPvB assessment

PBT and vPvB assessment Mesosulfuron-methyl: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).
Propoxycarbazone-sodium: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).
Mefenpyr-diethyl: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

12.6 Other adverse effects

Additional ecological information No further ecological information is available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product It is best to use all of the product in accordance with label directions. If it is necessary to dispose of unused product, please follow container label instructions and applicable local guidelines.

Contaminated packaging Small containers (< 10 l or < 10 kg) should be rinsed thoroughly using an integrated pressure rinsing device, or, by manually rinsing three times.
Add washings to sprayer at time of filling.
Dispose of empty and cleaned packaging safely.
Follow advice on product label and/or leaflet.

Waste key for the unused product **02 01 08*** agrochemical waste containing hazardous substances

SECTION 14: TRANSPORT INFORMATION

ADR/RID/ADN

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14.1 UN number	3077
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (PROPOXYCARBAZONE-SODIUM, SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC MIXTURE)
14.3 Transport hazard class(es)	9
14.4 Packaging Group	III
14.5 Environm. Hazardous Mark	YES
Hazard no.	90

This classification is in principle not valid for carriage by tank vessel on inland waterways. Please refer to the manufacturer for further information.

IMDG

14.1 UN number	3077
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (PROPOXYCARBAZONE-SODIUM, SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC MIXTURE)
14.3 Transport hazard class(es)	9
14.4 Packaging Group	III
14.5 Marine pollutant	YES

IATA

14.1 UN number	3077
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (PROPOXYCARBAZONE-SODIUM, SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC MIXTURE)
14.3 Transport hazard class(es)	9
14.4 Packaging Group	III
14.5 Environm. Hazardous Mark	YES

14.6 Special precautions for user

See sections 6 to 8 of this Safety Data Sheet.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

No transport in bulk according to the IBC Code.

SECTION 15: REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Further information**

WHO-classification: III (Slightly hazardous)

15.2 Chemical safety assessment

A chemical safety assessment is not required.



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SECTION 16: OTHER INFORMATION

Text of the hazard statements mentioned in Section 3

H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

Abbreviations and acronyms

Conc.	Concentration
LOEC/LOEL	Lowest observed effect concentration/level
UN	United Nations
OECD	Organization for Economic Co-operation and Development
EN	European Standard
ELV	Exposure Limit Value
N.O.S.	Not otherwise specified
SI	Statutory Instrument
IBC	International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)
EU	European Union
ELINCS	European list of notified chemical substances
EINECS	European inventory of existing commercial substances
EC-No.	European community number
NOEC/NOEL	No observed effect concentration/level
LDx	Lethal dose to x %
LCx	Lethal concentration to x %
ICx	Inhibition concentration to x %
ECx	Effective concentration to x %
CAS-Nr.	Chemical Abstracts Service number
MARPOL	MARPOL: International Convention for the prevention of marine pollution from ships
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
IMDG	International Maritime Dangerous Goods
IATA	International Air Transport Association
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
WHO	World health organisation
ATE	Acute toxicity estimate
TWA	Time weighted average

Reason for Revision: Safety Data Sheet according to Regulation (EU) No. 2015/830. The following sections have been revised: Section 2: Hazards Identification. Section 3: Composition / Information on Ingredients. Section 4: First Aid Measures. Section 7: Handling and Storage. Section 8: Exposure Controls / Personal Protection.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006



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The information contained within this Safety Data Sheet is in accordance with the guidelines established by Regulation (EU) 1907/2006 and Regulation (EU) 2015/830 amending Regulation (EU) No 1907/2006 and any subsequent amendments. This data sheet complements the user's instructions, but does not replace them. The information it contains is based on the knowledge available about the product concerned at the time it was compiled. Users are further reminded of the possible risks of using a product for purposes other than those for which it was intended. The required information complies with current EEC legislation. Addressees are requested to observe any additional national requirements.