



MESUROL

Version 4 / GB
102000007167

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Revision Date: 21.10.2014
Print Date: 21.10.2014

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

1.1 Product identifier

Trade name MESUROL
Product code (UVP) 04411935

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

Use Insecticide, Seed treatment

1.3 Details of the supplier of the safety data sheet

Supplier Bayer CropScience Limited
230 Cambridge Science Park
Milton Road
Cambridge
Cambridgeshire CB4 0WB
United Kingdom

Telephone +44(0)1223 226500
Telefax +44(0)1223 426240
Responsible Department Email: ukinfo@bayercropscience.com

1.4 Emergency telephone no.

Emergency telephone no. 0800-220876 (UK 24 hr)
+44(0)1635-563000 (Overseas 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.

Acute toxicity: Category 3
H301 Toxic if swallowed.

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.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

T Toxic, R25
N Dangerous for the environment, R50/53

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:

- Methiocarb

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H301 Toxic if swallowed.
 H410 Very toxic to aquatic life with long lasting effects.
 EUH208 Contains 5-chloro-2-methyl-isothiazol-3-one/2-methyl-isothiazol-3-one. May produce an allergic reaction.
 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.
 P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician.
 P501 Dispose of contents/container to returnable container supplier.

2.3 Other hazards

No other hazards known.

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

Flowable concentrate for seed treatment (FS)
 Methiocarb 500 g/l

Hazardous components

R-phrases according to EC directive 67/548/EEC
 Hazard statements according to Regulation (EC) No. 1907/2006

Name	CAS-No. / EC-No.	Classification		Conc. [%]
		EC Directive 67/548/EEC	Regulation (EC) No 1272/2008	
Methiocarb	2032-65-7 217-991-2	T; R25 N; R50/53	Acute Tox. 2, H300 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	44.70
Mixture of 5-Chlor-2-methyl-3(2H)-isothiazolon and 2-Methyl-2H-isothiazol-3-on	55965-84-9	T; R23/24/25 C; R34 R43 N; R50/53	Acute Tox. 3, H331 Acute Tox. 3, H311 Acute Tox. 3, H301 Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	> 0.0002 – < 0.0015
Glycerine	56-81-5 200-289-5	Not classified	Not classified	> 1.00

Further information

Methiocarb	2032-65-7	M-Factor: 100 (acute)
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For the full text of the R-phrases/ Hazard statements mentioned in this Section, see Section 16.

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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 in case of accidental inhalation of vapours or decomposition products. Oxygen or artificial respiration if needed. 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. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Induce vomiting only, if: 1. patient is fully conscious, 2. medical aid is not readily available, 3. a significant amount (more than a mouthful) has been ingested and 4. time since ingestion is less than 1 hour. (Vomit should not get into the respiratory tract.) Call a physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	Temporary blurred vision due to contraction of the pupils (miosis) following contact with the eyes., Bradycardia, Low blood pressure, Salivation, Bronchial hypersecretion, Vomiting, Diarrhoea, Sweating, Muscular fasciculation, Spasm, Breathing difficulties, Respiratory paralysis, Somnolence, Coma, Respiratory failure, Hypothermia, Convulsions, Nausea
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4.3 Indication of any immediate medical attention and special treatment needed

Risks	This product is a cholinesterase inhibitor carbamate.
Treatment	Monitor: respiratory, cardiac and central nervous system. Monitor: blood picture. Monitor: red blood cell and plasma cholinesterase. ECG - monitoring (Electrocardiogram). Oxygen or artificial respiration if needed. Keep respiratory tract clear. 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. The following antidote is generally accepted: atropine. Before antidote is administered, either clear symptoms of poisoning have to be present or the cholinesterase activity is inhibited to below 30% of normal. In case of convulsions, a benzodiazepine (e.g. diazepam) should be given according to standard regimens. Contraindications: oximes (pralidoxime, obidoxime).

SECTION 5: FIREFIGHTING MEASURES**5.1 Extinguishing media**

Suitable	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
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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), Carbon monoxide (CO), Methyl isocyanate, Nitrogen oxides (NOx), Sulphur oxides
5.3 Advice for firefighters	
Special protective equipment for fire-fighters	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 spillage enters drains leading to sewage works inform local water company immediately. If spillage enters rivers or watercourses, inform the Environment Agency (emergency telephone number 0800 807060).

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Clean contaminated floors and objects thoroughly, observing environmental regulations. Keep in suitable, closed containers for disposal.

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 No specific precautions required when handling unopened packs/containers; follow relevant manual handling advice. Ensure adequate ventilation.

Advice on protection against fire and explosion No special precautions required.

Hygiene measures Avoid contact with skin, eyes and clothing. Keep working clothes separately. Wash hands immediately after work, if necessary take a shower. 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

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Requirements for storage areas and containers	Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Store in a place accessible by authorized persons only. Keep away from direct sunlight.
Advice on common storage	Keep away from food, drink and animal feedingstuffs.
Suitable materials	HDPE (high density polyethylene)
7.3 Specific end uses	Refer to the label and/or leaflet.

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

Components	CAS-No.	Control parameters	Update	Basis
Methiocarb	2032-65-7	0.42 mg/m ³ (TWA)		OES BCS*
Glycerine (Mist.)	56-81-5	10 mg/m ³ (TWA)	12 2011	EH40 WEL

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

8.2 Exposure controls

Refer to COSHH assessment (Control of Substances Hazardous to Health (Amendment) Regulations 2004). Engineering controls should be used in preference to personal protective equipment wherever practicable. Refer also to COSHH Essentials.

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.
Hand protection	Wear CE Marked (or equivalent) nitrile rubber gloves (minimum thickness of 0,4 mm). Wash when contaminated and 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.
Eye protection	Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).
Skin and body protection	Wear standard coveralls and Category 3 Type 6 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. If chemical protection suit is splashed, sprayed or significantly contaminated, decontaminate as far as possible, then carefully remove and dispose of as advised by manufacturer.

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

Form	suspension
Colour	red
Odour	weak, characteristic
pH	4.0 - 6.0 at 100 % (23 °C)
Flash point	>100 °C No flash point - Determination conducted up to the boiling point.
Autoignition temperature	445 °C
Density	ca. 1.12 g/cm ³ at 20 °C
Water solubility	miscible
Partition coefficient: n-octanol/water	Methiocarb: log Pow: 3.08 at 20 °C Unbuffered
Viscosity, dynamic	250 - 350 mPa.s at 20 °C Velocity gradient 7.5 /s
Oxidizing properties	No oxidizing properties
Explosivity	Not explosive
9.2 Other information	Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY**10.1 Reactivity**

Thermal decomposition	from 270 °C Determined in glass. The value mentioned relates to the active ingredient.
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10.2 Chemical stability	Stable under recommended storage conditions.
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10.3 Possibility of hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions.
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10.4 Conditions to avoid	Extremes of temperature and direct sunlight.
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10.5 Incompatible materials	Store only in the original container.
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10.6 Hazardous decomposition products	No decomposition products expected under normal conditions of use.
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SECTION 11: TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects**

Acute oral toxicity	LD50 (rat) > 50 - < 300 mg/kg Test conducted with a similar formulation.
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Acute inhalation toxicity	LC50 (rat) > 1.571 mg/l Exposure time: 4 h
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	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	No eye irritation (rabbit) Test conducted with a similar formulation.
Sensitisation	Non-sensitizing. (mouse) OECD Test Guideline 429, local lymph node assay (LLNA)

Assessment repeated dose toxicity

Methiocarb did not cause specific target organ toxicity in experimental animal studies.

Assessment Mutagenicity

Methiocarb was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

Assessment Carcinogenicity

Methiocarb was not carcinogenic in lifetime feeding studies in rats and mice.

Assessment toxicity to reproduction

Methiocarb caused reproduction toxicity in generation studies in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Methiocarb is related to parental toxicity.

Assessment developmental toxicity

Methiocarb caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Methiocarb are related to maternal toxicity.

SECTION 12: ECOLOGICAL INFORMATION**12.1 Toxicity**

Toxicity to fish	LC50 (Lepomis macrochirus (Bluegill sunfish)) 0.65 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient.
Toxicity to aquatic invertebrates	EC50 (Water flea (Daphnia magna)) 0.0077 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient.
Toxicity to aquatic plants	IC50 (Desmodemus subspicatus) 2.2 mg/l Growth rate; Exposure time: 72 h The value mentioned relates to the active ingredient.

12.2 Persistence and degradability

Biodegradability Methiocarb:
not rapidly biodegradable

Koc Methiocarb: Koc: 660

12.3 Bioaccumulative potential

Bioaccumulation Methiocarb:

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Does not bioaccumulate.

12.4 Mobility in soil**Mobility in soil** Methiocarb: Slightly mobile in soils**12.5 Results of PBT and vPvB assessment****PBT and vPvB assessment** Methiocarb: 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 other effects to be mentioned.**SECTION 13: DISPOSAL CONSIDERATIONS****13.1 Waste treatment methods****Product** In accordance with current regulations and, if necessary, after consultation with the site operator and/or with the responsible authority, the product may be taken to a waste disposal site or incineration plant. Advice may be obtained from the local waste regulation authority (part of the Environment Agency in the UK).**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.
Large containers (> 25 l or > 25 kg) should not be rinsed or re-used for any other purpose.
Return large containers to supplier.
Follow advice on product label and/or leaflet.**Waste key for the unused product** **020108** agrochemical waste containing dangerous substances**SECTION 14: TRANSPORT INFORMATION****ADR/RID/ADN**

14.1 UN number	2992
14.2 Proper shipping name	CARBAMATE PESTICIDE, LIQUID, TOXIC (METHIOCARB SOLUTION)
14.3 Transport hazard class(es)	6.1
14.4 Packing group	III
14.5 Environm. Hazardous Mark	YES
Hazard no.	60
Tunnel Code	E

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	2992
14.2 Proper shipping name	CARBAMATE PESTICIDE, LIQUID, TOXIC (METHIOCARB SOLUTION)

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14.3 Transport hazard class(es) 6.1
14.4 Packing group III
14.5 Marine pollutant YES

IATA

14.1 UN number **2992**
14.2 Proper shipping name CARBAMATE PESTICIDE, LIQUID, TOXIC
(METHIOCARB SOLUTION)
14.3 Transport hazard class(es) 6.1
14.4 Packing group III
14.5 Environm. Hazardous Mark NO

UK 'Carriage' Regulations

14.1 UN number **2992**
14.2 Proper shipping name CARBAMATE PESTICIDE, LIQUID, TOXIC
(METHIOCARB SOLUTION)
14.3 Transport hazard class(es) 6.1
14.4 Packing group III
14.5 Environm. Hazardous Mark YES
Emergency action code 2X

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 73/78 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****UK and Northern Ireland Regulatory References**

This material may be subject to some or all of the following regulations (and any subsequent amendments). Users must ensure that any uses and restrictions as indicated on the label and/or leaflet are followed.

Transport

Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No 1348)
Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997 (SI 1997 No 2367)
Air Navigation Dangerous Goods Regulations 2002 (SI 2002 No 2786)

Supply and Use

Chemical (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No 716)
Chemical (Hazard Information and Packaging for Supply) (Northern Ireland) Regulations 2009
Control of Substances Hazardous to Health Regulations 2002 (SI 2002 No 2677)
EH40 Occupational Exposure Limits - Table 1 List of approved workplace exposure limits
Control of Pesticide Regulations 1986
Dangerous Substances and Explosive Atmospheres Regulations 2002

Waste Treatment

Environmental Protection Act 1990, Part II
Environmental Protection (Duty of Care) Regulations 1991
The Waste Management Licensing Regulations 1994 (as amended)
Hazardous Waste Regulations 2005 (Replacing Special Waste Regulations 1996 as amended)



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Landfill Directive
Regulation on Substances That Deplete the Ozone Layer 1994 (EEC/3093/94)
Water Resources Act 1991
Anti-Pollution Works Regulations 1999

Further information

WHO-classification: II (Moderately hazardous)

15.2 Chemical Safety Assessment

A chemical safety assessment is not required.

SECTION 16: OTHER INFORMATION

Text of R-phrases mentioned in Section 3

R23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
R25	Toxic if swallowed.
R34	Causes burns.
R43	May cause sensitisation by skin contact.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Text of the hazard statements mentioned in Section 3

H300	Fatal if swallowed.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H331	Toxic if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

The above information is intended to give general health and safety guidance on the storage and transport of the product.

It is not intended to apply to the use of the product for which purposes the product label and any appropriate technical usage literature available should be consulted and any relevant licenses, consents or approvals complied with.

The requirements or recommendations of any relevant site or working procedure, system or policy in force or arising from any risk assessment involving the substance or product should take precedence over any of the guidance contained in this safety data sheet where there is a difference in the information given.

The information provided in this safety data sheet is accurate at the date of publication and will be updated as and when appropriate.

No liability will be accepted for any injury, loss or damage resulting from any failure to take account of information or advice contained in this safety data sheet.

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