



## PISTOL

Version 6 / GB  
102000001746

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Revision Date: 13.09.2017  
Print Date: 14.09.2017

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

#### 1.1 Product identifier

Trade name PISTOL  
Product code (UVP) 05923883

#### 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 Environmental Science  
230 Cambridge Science Park  
Milton Road  
Cambridge  
Cambridgeshire CB4 0WB  
United Kingdom

Telephone 00800-1214 9451  
Telefax +44(0)1223 426240  
Responsible Department Email: [ukinfo@bayercropscience.com](mailto:ukinfo@bayercropscience.com)

#### 1.4 Emergency telephone no.

Emergency telephone no. 0800-220876 (UK 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 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:**

- Diflufenican
- Glyphosate, isopropylamine salt



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- 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.  
 EUH208 Contains 1,2-benzisothiazolin-3-one. May produce an allergic reaction.

**Precautionary statements**

- P501 Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean 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**

Suspension concentrate (=flowable concentrate)(SC)  
 Diflufenican/Glyphosate Isopropylammonium 40:337,5 g/l (equivalent to 250 g/l Glyphosate)

**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	
Diflufenican	83164-33-4	Aquatic Chronic 3, H412	3.42
Glyphosate, isopropylamine salt	38641-94-0 254-056-8	Aquatic Chronic 2, H411	28.87
Alcohols, C11-14-iso-, C13-rich	68526-86-3 271-235-6	Aquatic Acute 1, H400	> 0.25 – < 2.50
1,2-Propanediol	57-55-6 200-338-0 01-2119456809-23-xxxx	Not classified	> 1.0
Diatomaceous earth	61790-53-2 231-545-4	Not classified	> 1.00
1,2-Benzisothiazol-3(2H)- one	2634-33-5 220-120-9	Skin Sens. 1, H317 Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Acute 1, H400	> 0.005 – < 0.05
(2-Hydroxypropyl)ammonium phosphate	67952-32-3 267-885-5	Met. Corr. 1, H290 Acute Tox. 4, H312 Skin Corr. 1B, H314 Eye Dam. 1, H318	>= 0.1 – <= 25



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Ethoxylated alcohols C8-C10	71060-57-6	Acute Tox. 4, H302 Eye Dam. 1, H318	>= 0.1 – <= 25
Crystalline quartz (respirable)	14808-60-7 238-878-4	STOT RE 1, H372	<= 1.5

**Further information**

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. Remove contaminated clothing immediately and dispose of safely.
- Skin contact** Wash off thoroughly with plenty of soap and water, if available with polyethyleneglycol 400, subsequently rinse with water.
- Eye contact** In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention if irritation develops and persists.
- Ingestion** Do NOT induce vomiting. Rinse mouth, ingest activated charcoal. Obtain medical attention.

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

- Symptoms** Nausea, Vomiting, Diarrhoea, Salivation, If large amounts are ingested, the following symptoms may occur: Abnormally decreased blood volume (hypovolaemia), Acidosis, Liver disorders, Kidney disorders

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

- Risks** Must NOT be confused with organophosphorus compounds!
- Treatment** Gastric lavage is not normally required. However, if a significant amount (more than a mouthful) has been ingested, administer activated charcoal and sodium sulphate. Treat symptomatically. There is no specific antidote.

**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



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<b>5.2 Special hazards arising from the substance or mixture</b>	In the event of fire the following may be released:; Carbon monoxide (CO), Nitrogen oxides (NOx), Hydrogen fluoride, Oxides of phosphorus
<b>5.3 Advice for firefighters</b>	
<b>Special protective equipment for firefighters</b>	In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.
<b>Further information</b>	Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat. Whenever possible, contain fire-fighting water by diking area with sand or earth.

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

<b>Precautions</b>	Keep people away from and upwind of spill/leak. Avoid contact with spilled product or contaminated surfaces. When dealing with a spillage do not eat, drink or smoke. Use personal protective equipment.
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<b>6.2 Environmental precautions</b>	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).
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### 6.3 Methods and materials for containment and cleaning up

<b>Methods for cleaning up</b>	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.
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<b>Additional advice</b>	Check also for any local site procedures.
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<b>6.4 Reference to other sections</b>	Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.
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## SECTION 7: HANDLING AND STORAGE

### 7.1 Precautions for safe handling

<b>Advice on safe handling</b>	Use only in area provided with appropriate exhaust ventilation.
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<b>Advice on protection against fire and explosion</b>	No special precautions required.
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<b>Hygiene measures</b>	Avoid contact with skin, eyes and clothing. Keep working clothes separately. Wash hands before breaks and immediately after handling the product. Remove soiled clothing immediately and clean thoroughly before using again.
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**Requirements for storage areas and containers** Store in a place accessible by authorized persons only. Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from direct sunlight. Protect from freezing.

**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
Diflufenican	83164-33-4	5.5 mg/m <sup>3</sup> (TWA)		OES BCS*
1,2-Propanediol (Particulate.)	57-55-6	10 mg/m <sup>3</sup> (TWA)	12 2011	EH40 WEL
1,2-Propanediol (Total vapour and particulates.)	57-55-6	474 mg/m <sup>3</sup> /150 ppm (TWA)	12 2011	EH40 WEL
Diatomaceous earth (Respirable dust.)	61790-53-2	1.2 mg/m <sup>3</sup> (TWA)	12 2011	EH40 WEL
Crystalline quartz (respirable) (Respirable.)	14808-60-7	0.1 mg/m <sup>3</sup> (TWA)	12 2011	EH40 WEL

\*OES BCS: Internal Bayer AG, Crop Science Division "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**

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.

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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.

<b>Eye protection</b>	Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).
<b>Skin and body protection</b>	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.

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

<b>Form</b>	suspension
<b>Colour</b>	white to light grey
<b>Odour</b>	almost odourless
<b>Flash point</b>	Not relevant; aqueous solution
<b>Density</b>	ca. 1.17 g/cm <sup>3</sup> at 20 °C
<b>Water solubility</b>	miscible
<b>Partition coefficient: n-octanol/water</b>	Diflufenican: log Pow: 4.2 Glyphosate: log Pow: -3.2
<b>Viscosity, dynamic</b>	180 - 300 mPa.s at 20 °C Shear rate of 20/sec 80 - 150 mPa.s at 20 °C Shear rate of 100/sec
<b>Viscosity, kinematic</b>	66.1 mm <sup>2</sup> /s at 40 °C Shear rate of 100/sec
<b>Surface tension</b>	37.2 mN/m at 20 °C Determined as a 0,1% solution in distilled water (1 g/l).
<b>9.2 Other information</b>	Further safety related physical-chemical data are not known.

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

<b>Thermal decomposition</b>	Stable under normal conditions.
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<b>10.2 Chemical stability</b>	Stable under recommended storage conditions.
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<b>10.3 Possibility of hazardous reactions</b>	No hazardous reactions when stored and handled according to prescribed instructions.
<b>10.4 Conditions to avoid</b>	Extremes of temperature and direct sunlight.
<b>10.5 Incompatible materials</b>	Store only in the original container.
<b>10.6 Hazardous decomposition products</b>	No decomposition products expected under normal conditions of use.

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**SECTION 11: TOXICOLOGICAL INFORMATION**

**11.1 Information on toxicological effects**

<b>Acute oral toxicity</b>	LD50 (Rat) > 2,000 mg/kg
<b>Acute dermal toxicity</b>	LD50 (Rat) > 2,000 mg/kg
<b>Skin irritation</b>	Slight irritant effect - does not require labelling. (Rabbit)
<b>Eye irritation</b>	No eye irritation (Rabbit)
<b>Sensitisation</b>	Non-sensitizing. (Guinea pig) OECD Test Guideline 406, Buehler test Non-sensitizing. (Mouse) OECD Test Guideline 429, local lymph node assay (LLNA)

**Assessment STOT Specific target organ toxicity – single exposure**

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

**Assessment STOT Specific target organ toxicity – repeated exposure**

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

**Assessment mutagenicity**

Diflufenican was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.  
Glyphosate was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

**Assessment carcinogenicity**

Diflufenican was not carcinogenic in lifetime feeding studies in rats and mice.  
Glyphosate was not carcinogenic in lifetime feeding studies in rats and mice.

**Assessment toxicity to reproduction**

Diflufenican did not cause reproductive toxicity in a two-generation study in rats.  
Glyphosate did not cause reproductive toxicity in a two-generation study in rats.

**Assessment developmental toxicity**

Diflufenican did not cause developmental toxicity in rats and rabbits.  
Glyphosate did not cause developmental toxicity in rats and rabbits.

**Aspiration hazard**

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

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**SECTION 12: ECOLOGICAL INFORMATION**

**12.1 Toxicity**

**Toxicity to fish**

LC50 (Oncorhynchus mykiss (rainbow trout)) > 109 µg/l  
Exposure time: 96 h  
The value mentioned relates to the active ingredient diflufenican.

LC50 (Oncorhynchus mykiss (rainbow trout)) 86 mg/l  
Exposure time: 96 h  
The value mentioned relates to the active ingredient glyphosate-isopropylamine salt.

**Toxicity to aquatic invertebrates**

EC50 (Daphnia magna (Water flea)) > 240 µg/l  
Exposure time: 48 h  
The value mentioned relates to the active ingredient diflufenican.

EC50 (Daphnia (water flea)) 930 mg/l  
Exposure time: 48 h  
The value mentioned relates to the active ingredient glyphosate-isopropylamine salt.

**Toxicity to aquatic plants**

EC50 (Desmodesmus subspicatus (green algae)) 0.015 mg/l  
Exposure time: 72 h  
Test conducted with a similar formulation.

EC50 (Lemna minor (common duckweed)) > 100 mg/l  
Exposure time: 7 d

**12.2 Persistence and degradability**

**Biodegradability**

Diflufenican:  
Not rapidly biodegradable  
Glyphosate:  
Not rapidly biodegradable

**Koc**

Diflufenican: Koc: 3417  
Glyphosate: Koc: 6920

**12.3 Bioaccumulative potential**

**Bioaccumulation**

Diflufenican: Bioconcentration factor (BCF) 1,596  
Does not bioaccumulate.  
Glyphosate:  
Does not bioaccumulate.

**12.4 Mobility in soil**

**Mobility in soil**

Diflufenican: Slightly mobile in soils  
Glyphosate: Immobile in soil

**12.5 Results of PBT and vPvB assessment**

**PBT and vPvB assessment**

Diflufenican: 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).  
Glyphosate: 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**





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**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** **02 01 08\*** agrochemical waste containing hazardous substances

**SECTION 14: TRANSPORT INFORMATION**

**ADR/RID/ADN**

14.1 UN number	<b>3082</b>
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DIFLUFENICAN SOLUTION)
14.3 Transport hazard class(es)	9
14.4 Packing 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	<b>3082</b>
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DIFLUFENICAN SOLUTION)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Marine pollutant	YES

**IATA**

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14.1 UN number	<b>3082</b>
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DIFLUFENICAN SOLUTION )
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environm. Hazardous Mark	YES

**UK 'Carriage' Regulations**

14.1 UN number	<b>3082</b>
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DIFLUFENICAN SOLUTION)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environm. Hazardous Mark	YES
Emergency action code	3Z

**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.

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**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: III (Slightly hazardous)

**15.2 Chemical safety assessment**

A chemical safety assessment is not required.

**SECTION 16: OTHER INFORMATION****Text of the hazard statements mentioned in Section 3**

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H372	Causes damage to organs (Lungs) through prolonged or repeated exposure if inhaled.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

**Abbreviations and acronyms**

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute toxicity estimate
CAS-Nr.	Chemical Abstracts Service number
Conc.	Concentration
EC-No.	European community number
ECx	Effective concentration to x %
EH40 WEL	Worker Exposure Limit
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
EN	European Standard
EU	European Union
IATA	International Air Transport Association
IBC	International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)
ICx	Inhibition concentration to x %
IMDG	International Maritime Dangerous Goods
LCx	Lethal concentration to x %
LDx	Lethal dose to x %
LOEC/LOEL	Lowest observed effect concentration/level
MARPOL	MARPOL: International Convention for the prevention of marine pollution from ships
N.O.S.	Not otherwise specified
NOEC/NOEL	No observed effect concentration/level



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OECD	Organization for Economic Co-operation and Development
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SI	Statutory Instrument
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

**Reason for Revision:** Safety Data Sheet according to Regulation (EU) No. 2015/830. The following sections have been revised: Section 3: Composition / Information on Ingredients. Section 8: Exposure Controls / Personal Protection.

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