Material Safety Data Sheet

ILLOXAN® 3EC HERBICIDE

MSDS Number: 102000003065
MSDS Version 2.0
Revision Date: 01/11/2008

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name ILLOXAN® 3EC HERBICIDE
MSDS Number 102000003065
EPA Registration No. 432-1231

Bayer Environmental Science
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
USA

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)
For Product Information call: 1-800-331-2867

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Average % by Weight
Diclofop-methyl	51338-27-3	34.70
Cyclohexanone	108-94-1	10.00
1,2,4-Trimethylbenzene	95-63-6	10.20
Xylene	1330-20-7	7.50
Ethylbenzene	100-41-4	1.50
Calcium dodecylbenzenesulfonate, branched	70528-83-5	3.85
2-Methylpropan-1-ol	78-83-1	1.65
Nonylphenol ethoxylate	9016-45-9	1.50

SECTION 3. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

Emergency Overview Danger! Corrosive - causes irreversible eye damage. Harmful if swallowed or absorbed through skin. Do not get in eyes, on skin, or on clothing. Avoid inhalation of vapour or mist. Do not take internally.

Physical State liquid

Odor aromatic

Appearance light to dark brown

Routes of Exposure Skin Absorption, Vapor/mist inhalation, Eye contact, Ingestion

Immediate Effects
Eye Corrosive - causes irreversible eye damage. Do not get in eyes.

Skin	Moderate skin irritation. Prolonged skin contact may cause skin irritation and/or dermatitis. Harmful if absorbed through skin. Do not get on skin or clothing.
Ingestion	Ingestion of sublethal doses causes muscle weakness, tremors, diarrhea and/or weight loss. Do not take internally. Harmful if swallowed.
Inhalation	Avoid contact or inhalation of spray mist. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
Chronic or Delayed Long-Term	This product or its components may have target organ effects. This product or its components may have long term (chronic) health effects. This product contains ingredients that are considered to be probable or suspected human carcinogens (see Section 11 - Chronic).
Potential Environmental Effect	Toxic to fish and aquatic invertebrates.

SECTION 4. FIRST AID MEASURES

General	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
Eye	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.
Skin	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.
Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.
Notes to Physician	
Hazards	Contains hydrocarbon solvents. May pose an aspiration pneumonia hazard.
Treatment	There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5. FIRE FIGHTING MEASURES

Flash point	37.8 °C / 100.0 °F The product is combustible.
Fire and Explosion Hazards	In the event of fire the following can be released: Hydrogen chloride (HCl) Sulphur oxides Carbon monoxide (CO) Carbon dioxide (CO2)
Suitable Extinguishing Media	Water spray, Foam, Carbon dioxide (CO2), Dry powder
Fire Fighting Instructions	Keep out of smoke. Fight fire from upwind position. Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat. Do not allow run-off from fire fighting to enter drains or water courses. Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Remove all sources of ignition. Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.
Methods for Cleaning Up	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.
Additional Advice	Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal.

SECTION 7. HANDLING AND STORAGE

Handling Procedures	Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation. Handle and open container in a manner as to prevent spillage. Keep away from heat and sources of ignition.
Storing Procedures	Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

Work/Hygienic Procedures

Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.

Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

Min/Max Storage Temperatures

Recommended minimum transport/storage temperature: -7 °C / 19 °F

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection

Eye wash facility and safety shower should be available. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.

Follow all label instructions. Train employees in safe use of the product.

Eye/Face Protection

Safety glasses, in case of increased risk, also a face shield

Hand Protection

Chemical resistant nitrile rubber gloves

Body Protection

Wear long-sleeved shirt and long pants and shoes plus socks.
Chemical resistant apron when cleaning equipment, mixing or loading.

Respiratory Protection

When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Exposure Limits

Diclofop-methyl	51338-27-3	OES BCS*			0.1 mg/m3
Cyclohexanone	108-94-1	ACGIH	TWA		20 ppm
		ACGIH	STEL		50 ppm
		NIOSH	REL	25 ppm	100 mg/m3
		OSHA Z1	PEL	50 ppm	200 mg/m3
		OSHA Z1A	TWA	25 ppm	100 mg/m3
		US CA OEL	TWA PEL	25 ppm	100 mg/m3
		TX ESL	ST ESL	120 ppm	480 ug/m3
		Remarks		Screening levels that have the odor designations represent the levels of constituents in the air at which the odor would be a nuisance.	
		TX ESL	AN ESL	12 ppm	48 ug/m3
		Remarks		Screening levels that have	

				the odor designations represent the levels of constituents in the air at which the odor would be a nuisance.	
Ethylbenzene	100-41-4	ACGIH	TWA		100 ppm
		ACGIH	STEL		125 ppm
		NIOSH	REL	100 ppm	435 mg/m3
		NIOSH	STEL	125 ppm	545 mg/m3
		OSHA Z1	PEL	100 ppm	435 mg/m3
		OSHA Z1A	TWA	100 ppm	435 mg/m3
		OSHA Z1A	STEL	125 ppm	545 mg/m3
		US CA OEL	TWA PEL	100 ppm	435 mg/m3
		US CA OEL	STEL	125 ppm	545 mg/m3
		TX ESL	ST ESL	460 ppm	2000 ug/m3
		Remarks		Screening levels that have the odor designations represent the levels of constituents in the air at which the odor would be a nuisance.	
		TX ESL	AN ESL	46 ppm	200 ug/m3
		Remarks		Screening levels that have the odor designations represent the levels of constituents in the air at which the odor would be a nuisance.	

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	light to dark brown
Physical State	liquid
Odor	aromatic
pH	4.9 (1 %)
Density	approx. 1.03 g/cm³ at 20 °C
Boiling Point	80 °C / 176 °F

SECTION 10. STABILITY AND REACTIVITY

Conditions to Avoid	Heat, flames and sparks.
Incompatibility	Strong acids Strong bases Strong oxidizing agents
Hazardous Decomposition Products	Thermal decomposition can lead to release of: Carbon monoxide Carbon dioxide (CO2) Hydrogen chloride (HCl) Sulphur oxides
Hazardous Reactions	Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Only acute toxicity studies have been performed on this product as formulated. The non-acute information pertains to the technical-grade active ingredient, diclofop-methyl.

Acute Oral Toxicity	male rat: LD50: 2,870 mg/kg female rat: LD50: 2,000 - 2,500 mg/kg
Acute Dermal Toxicity	rat: LD50: > 2,000 mg/kg
Acute Inhalation Toxicity	rat: LC50: > 4.9 mg/l Exposure time: 4 h Determined in the form of liquid aerosol. rat: LC50: > 19.6 mg/l Exposure time: 1 h Determined in the form of liquid aerosol. Extrapolated from the 4 hr LC50.
Skin Irritation	rabbit: Moderate skin irritation.
Eye Irritation	rabbit: Corrosive - causes irreversible eye damage.
Sensitization	guinea pig: Non-sensitizing.
Chronic Toxicity	Diclofop-methyl caused effects in the kidney and/or liver in chronic studies in rats, mice and dogs.

Assessment Carcinogenicity

Diclofop-methyl has been classified by EPA as "likely to be carcinogenic to humans" based on an increased incidence of liver tumors in mice and rats.

ACGIH

None.

NTP

None.

IARC

None.

OSHA

None.

Reproductive & Developmental Toxicity	REPRODUCTION: Diclofop-methyl caused toxicity in offspring at doses producing systemic toxicity in adult rats. DEVELOPMENTAL TOXICITY: Diclofop-methyl was not a primary developmental toxicant in rats and rabbits. Developmental effects were observed in rats but were considered secondary to maternal toxicity.
Neurotoxicity	Diclofop-methyl did not demonstrate the potential to cause neurotoxicity in standard toxicity studies using laboratory animals.
Mutagenicity	Diclofop-methyl was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

SECTION 12. ECOLOGICAL INFORMATION

Environmental Precautions	Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Do not apply when weather conditions favor runoff or drift. Apply this product as specified on the label.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance	Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.
Container Disposal	Triple rinse containers. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill or incineration, or if allowed by State and Local authorities, by burning. If burned, stay out of smoke. Follow advice on product label and/or leaflet.

SECTION 14. TRANSPORT INFORMATION

DOT CLASSIFICATION:
Not Regulated for Domestic Surface Transportation*

* For Bulk packages greater than 119 gallons are regulated as follows:
NA1993, Combustible Liquid, N.O.S. (xylene range solvents)Combustible Liquid, PG III

FREIGHT CLASSIFICATION:
Compounds, Tree or Weedkilling, N.O.I. other than poison, having a density of 20LBS or greater per cubic foot

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 432-1231

US Federal Regulations

TSCA list

Cyclohexanone	108-94-1
1,2,4-Trimethylbenzene	95-63-6
Xylene	1330-20-7
Ethylbenzene	100-41-4
Calcium dodecylbenzenesulfonate, branched	70528-83-5
2-Methylpropan-1-ol	78-83-1
Nonylphenol ethoxylate	9016-45-9

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
None.

SARA Title III - Section 302 - Notification and Information
None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

Ethylbenzene	100-41-4	0.1%

US States Regulatory Reporting

CA Prop65
This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients

Cyclohexanone	108-94-1	CA, CT, IL, MN, PA, RI
Ethylbenzene	100-41-4	CA, CT, IL, MN, NJ, PA, RI
2-Methylpropan-1-ol	78-83-1	CA, CT, IL, MN, PA, RI

Canadian Regulations

Canadian Domestic Substance List

Cyclohexanone	108-94-1
1,2,4-Trimethylbenzene	95-63-6
Xylene	1330-20-7
Ethylbenzene	100-41-4
Calcium dodecylbenzenesulfonate, branched	70528-83-5
2-Methylpropan-1-ol	78-83-1
Nonylphenol ethoxylate	9016-45-9

Environmental

CERCLA

Cyclohexanone	108-94-1	5,000 lbs
Xylene	1330-20-7	100 lbs
Ethylbenzene	100-41-4	1,000 lbs
2-Methylpropan-1-ol	78-83-1	5,000 lbs

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

International Regulations

European Inventory of Existing Commercial Substances (EINECS)

Calcium dodecylbenzenesulfonate, branched	70528-83-5

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 2 Reactivity - 0 Others - none

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason to Revise: Updated due to new system and numbering scheme. Updated for general editorial purposes.

Revision Date: 01/11/2008

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