MAXIMUM ECONOMIC YIELD

Safety Data Sheet

MEYCHEM Mesotrione 48 SC Herbicide

SECTION 1: IDENTIFICATION OF THE SUBSTANCE AND THE COMPANY

1.1 Product identifiers

MEYCHEM Mesotrione 48 SC Herbicide
CAS No. 104206-82-8
EPA Reg. No. 87895-12-80967

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

Herbicide

1.3 Details of the supplier of the safety data sheet

MEY Corporation, 121 S. Estes Drive, Suite 101, Chapel Hill, NC 27514, USA
Telephone: (919) 932-5800
Fax: (919) 932-5820
E-mail: safetydatasheets@meycorp.com

1.4 Emergency telephone numbers

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT Call CHEMTREC – Day or Night: 1-800-424-9300 toll free in the continental U.S., Puerto Rico, Canada, or Virgin Islands. For calls originating elsewhere: 1-703-527-3887 (collect calls accepted).

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008
Reproductive toxicity (Category 2), H361d
Specific target organ toxicity - repeated exposure (Category 2), Eyes, Nervous system, H373
Short-term (acute) aquatic hazard (Category 1), H400
Long-term (chronic) aquatic hazard (Category 1), H410

2.2 Label Elements

Signal word: WARNING

Hazard Pictograms:



Hazard statements:

H361: Suspected of damaging fertility or the unborn child
H373: May cause damage to organs through prolonged or repeated exposure
H410 : Very toxic to aquatic life with long-lasting effects

Precautionary statements:

P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P203 Explosive; fire, blast, or projection hazard
P 280 Wear protective gloves/protective clothing/eye protection/face protection.
P318 if exposed or concerned, get medical advice.
P319 Get medical help if you feel unwell.
P273 Avoid release to the environment.
P391 Collect spillage.
P405 Store locked up.

Supplemental Hazard Statements:
None

2.3 Other hazards
None

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances
Mesotrione
Formula: $C_{14}H_{13}NO_7S$
Molecular weight: 339.32 g/mol

COMPONENT	CAS No.	% by weight (approximate)
Mesotrione: 2-(4-mesyl-2-nitrobenzoyl)cyclohexane-1,3-dione	104206-82-8	41.0
Water	7732-18-5	42.0
Ethylene Glycol	107-21-1	10.3
Other ingredients	Trade Secret	6.7

SECTION 4: FIRST AID MEASURES

4.1 Description of first-aid measures.

If swallowed -- Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

If eye contact -- Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel. Remove contact lenses.

If on skin -- Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

If inhaled -- Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

General advice - Show this material safety data sheet to the doctor in attendance.

Note to Physician -- No specific antidote. All treatment should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

4.2 Most important symptoms and effects, both acute and delayed.
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed.
No data available

SECTION 5: FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
If product is involved in a fire, use water spray, foam, dry powder, carbon dioxide, or sand. Keep nearby containers and equipment cool with a water stream.

5.2 Special hazards arising from the substance or mixture

The substance decomposes on burning producing toxic fumes including carbon oxides, nitrogen oxides (NOx) hydrogen chloride gas, and hydrogen fluoride. Do not breathe fumes. Wear self-contained breathing apparatus. Development of hazardous combustion gases or vapors is possible in the event of fire.

5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: ACCIDENTIAL RELEASE MEASURES

6.1 Personal precautions, protective equipment, and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dust. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.
For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dust.

6.4 Reference to other sections

Refer to Section 13 for disposal of wastes and spilled material.
Refer to personal protection recommendations in Section 8.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

KEEP OUT OF REACH OF CHILDREN and animals. Prevent eating, drinking, and tobacco use in areas where there is a potential for exposure to the material. Wear full protective clothing and equipment (see Section 8). After work, rinse gloves and remove protective equipment, and wash hands thoroughly with soap and water after handling, and before eating, tobacco use, drinking, or using the toilet. Wash contaminated clothing separately. Keep containers closed when not in use. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store unused product out of reach of children and animals, away from food, feedstuffs, fertilizers, seed, and water sources. Keep out of direct sunlight. Storage place should be cool, well ventilated, dry, and away from heat. Remove strong bases and oxidants away from the product. Store in closed original container only.

7.3 Specific end use(s)

When opening a container and mixing, protective impermeable boots, clean overalls impermeable gloves, eye protection and a respirator should be worn. Avoid contact to mouth and eyes. Before eating, drinking, or smoking, hands, and other exposed skin.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameter

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment (PPE)

Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body Protection

Impervious clothing, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle r (US) or type ABEKP2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:	Beige to tan liquid
Odor:	Faint pleasant odor
pH :	3.4 at 25°C
Melting point:	165°F
Flammability:	Not highly flammable
Vapor pressure:	<5.69 x 10-3 mPa at 20°C
Density:	1.49 (20°C)
Solubility: Water:	0.16 (unbuffered water), 2.2 (pH 4.8), 15 (pH 6.9), 22 (pH 9) (all in g/l, 20°C)
Solubility: Other	Acetonitrile 117.0, Acetone 93.3, Methanol 4.6, 1,2-dichloroethane 66.3, Ethyl acetate 18.6, Xylene1.6, Toluene 3.1, n-Heptane < 0.5 (all in g/l, 20°C).
Partition coefficient n-octanol/water:	K_{ow} logP: 0.11 (unbuffered water), 0.90 (pH 5), <-1.0 (pH 7 and 9)
Explosive properties:	Non-explosive
Oxidizing properties:	Non-oxidizing

9.2 Other information

Not available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

The product is stable for the period of two years, when stored under optimum conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4 Conditions to avoid

Extreme temperature conditions (heat and cold), sunlight, and moisture.

10.5 Incompatible materials

The product is not compatible with strong oxidizing agents.

10.6 Hazardous decomposition products

In the event of fire: see section 5. The substance decomposes on burning producing toxic fumes including carbon oxides, nitrogen oxides (NOx) hydrogen chloride gas, and hydrogen fluoride.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Oral Acute LD_{50}	>5000 mg/kg (Rats)
Dermal Acute LD_{50}	>2000 mg/kg (Rats)
Inhalation LC_{50} (4 hr)	>4.75 mg/l (Rats - male and female)
Skin irritation (Rabbits)	Non irritant
Eye irritation (Rabbits)	Non irritant
Skin sensitization	Not a sensitizer to skin of Guinea pigs
Germ cell mutagenicity	Non-mutagenic
Carcinogenicity	Non-carcinogenic
Reproductive toxicity	Ocular effects were observed in offspring

SECTION 12: ECOLOGICAL INFORMATION

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, ocean, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product in sewer systems without previously notifying the sewage treatment plant authority.

12.1 Toxicity

Fish, Rainbow trout	LC_{50} (96 h): >120 mg/l
Daphnia magna	EC_{50} (48 h, static): >900 mg/l
Algae, *Pseudokirchneriella subcapitata*	EC_{50} (120 h) 3.5 mg/l
Bees	LD_{50} (oral): >11 µg/bee LD_{50} (contact): >100 µg/bee
Earthworms, *Eisenia foetida*	LC_{50} (14 days): >2000 mg/kg soil
Birds, Bobwhite quail	LD_{50} : >2000 mg/kg.

12.2 Persistence and degradability

Mesotrione does not show any persistence

12.3 Bioaccumulative potential

Mesotrione does not show any bioaccumulation.

12.4 Mobility in soil

No data available

12.5 Other adverse effects

No data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product Disposal

Pesticide wastes are acutely hazardous. Keep out of drains, sewers, ditches, and water ways. Recycle if appropriate facilities and equipment are available or burn in an appropriate licensed commercial incinerator. Avoid exposure, if possible, by the use of appropriate protective clothing and masks. Absorb spillage with lime, damp sawdust, sand, or earth and dispose of it safely (see below). If spillage is large, contain it by building a

barrier of earth or sandbags. Waste should be burnt in a proper high temperature incinerator with effluent scrubbing. Where no incinerator is available, contaminated absorbents or surplus products should be decomposed by hydrolysis at pH 12 or above. Contact with a suitable hydrolyzing agent is required to ensure degradation of the active ingredient to a safe level. Dispose of product in accordance with local regulation. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into streams, water courses, open waterways, ditches, fields with drainage systems, or the catchment areas of boreholes, wells, springs, or ponds. Follow all local, regional, national, and international regulations.

Container Disposal

DO NOT reuse or refill containers. Completely empty containers by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into formulation equipment. Then offer for recycling if available or dispose of containers in a sanitary landfill, or by other procedures approved by state and local authorities. Empty, damaged, or leaking containers can be decontaminated with a 10% sodium carbonate solution at the rate of at least 1 liter per 20-liter container.

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

SECTION 14: TRANSPORT INFORMATION

14.1 UN number

ADR/RID:	3077
IMDG:	3077
IATA:	3077

14.2 UN proper shipping name

ADR/RID:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Mesotrione)
IMDG:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Mesotrione)
IATA:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Mesotrione)

14.3 Transport hazard class(es)

ADR/RID:	9
IMDG:	9
IATA:	9

14.4 Packaging group

ADR/RID:	III
IMDG:	III
IATA:	III

14.5 Environmental hazards

ADR/RID:	Yes
IMDG:	Yes. Marine pollutant
IATA:	Yes

14.6 Special precautions for user

Ensure that containers are sound and that labels are securely fixed and undamaged before dispatch. Do not load together with food and animal feed.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health, and environmental regulations/legislation specific for the substance or mixture

H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life. Short- term (acute) aquatic hazard (Category 1).
H410	Suspected of damaging the unborn child. Long- term (chronic) aquatic hazard (Category 1).

15.2 Chemical Safety Assessment

Chemical safety assessment has been performed by World Health Organization for the International Program on Chemical Safety.

15.3 Other Information

Federal Fungicide, Insecticide, Rodenticide Act (FIFRA)

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is

subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION. Harmful if swallowed. Harmful if absorbed through the skin. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

Acute oral toxicity: FIFRA category IV.
Acute dermal toxicity: FIFRA category III.
Acute inhalation toxicity: FIFRA category IV.
Skin irritation: FIFRA category IV.
Eye irritation: FIFRA category IV.
Skin sensitization: No skin sensitization.

SECTION 16: OTHER INFORMATION

The information given here is not necessarily exhaustive but is representative of relevant, reliable data. Follow all local, regional, national, and international regulations. Please consult the supplier if further information is needed. For more information refer to the product label. Please consult MEY Corporation if further information is needed.

	Health	Flammability	Instability	Additional Markings
NFPA	2	0	1	
0 = Minimal hazard, 1 = Slight hazard, 2 = Moderate hazard, 3 = Severe hazard, 4 = Extreme hazard				

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA APPROVED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course. In the USA, use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information are set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA approved label.

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