

Section 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier:

Identification on the label/Trade name: Diethyl malonate
Additional identification: Diethyl malonate
Identification of the product: CAS No. : 105-53-3

1.2 Relevant identified uses of the substance and uses advised against:

1.2.1 Identified uses:

Used as as an intermediate to synthesize substance.

1.2.2 Uses advised against:

Not available

1.3 Details of the supplier of the safety data sheet:

Supplier: Western Reserve Chemicals
Address: 4837 Darrow Road, Stow, OH 44224 USA
Telephone: 330-650-2244
Fax: 330-650-2255
Website: www.wrchem.com

1.4 Emergency telephone Number:

Chemtrec: 1-800-424-9300 US

Section 2 Hazards Identification

2.1 Classification of the substance/mixture:

2.1.1 Classification:

GHS Classification of the substance or mixture in accordance with 29 CFR 1910.1200 (OSHA HCS):

Flammable liquids, Category 4
Eye Irritation, Category 2A
Hazardous to the aquatic environment (Acute), Category 3

2.2 label elements:

Hazard Pictograms:



Signal Word(S):

Warning

Hazard Statement: Combustible liquid
Causes serious eye irritation
Harmful to aquatic life

Precautionary statement: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Wash skin thoroughly after handling.
Avoid release to the environment.
Wear protective gloves/eye protection/face protection.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
If case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

2.3 Other hazards: None

Section 3 Composition/information on ingredients

Substance/Mixture: Substance

Ingredient(s):

Chemical Name	Registration No.	CAS No.	EC No.	Concentration
Diethyl malonate	N/A	105-53-3	203-305-9	≥99%

Section 4 First aid measures

4.1 Description of first aid measures:

In all cases of doubt, or when symptoms persist, seek medical attention.

4.1.1 In case of inhalation:

Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

4.1.2 In case of skin contact:

Get medical aid. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.

4.1.3 In case of eyes contact:

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

4.1.4 In case of ingestion:

If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

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

Causes serious eye irritation.

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

If skin irritation or rash occurs, get medical advice/attention.

Section 5 Fire-Fighting measures

5.1 Extinguishing media:

Suitable extinguishing media: Use dry chemical, carbon dioxide, or chemical foam.

Unsuitable extinguishing media: Not available.

5.2 Special hazards arising from the substance or mixture

Emits toxic fumes under fire conditions and combustible liquid.

5.3 Advice for firefighters:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

Section 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

6.1.1 For non-emergency personnel: Wear respirator, chemical safety goggles, rubber boots and heavy rubber gloves.

6.1.2 For emergency responders: Wear an appropriate NIOSH/MSHA approved respirator if mist, vapor or dust is generated.

6.2 Environmental Precautions:

Avoid disposing into drainage/sewer system or directly into the aquatic environment. Keeping away from drains, surface-and ground-water and soil.

6.3 Methods for Containment and Cleaning up:

Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal. Clean up affected area.

6.4 Reference to other sections:

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

Section 7 Handling and storage

7.1 Precautions for safe handling:

7.1.1 Protective measures:

Handle in well ventilated areas. Eliminate all sources of ignition, and do not generate flames or sparks. Take precautionary measures against static discharges.

7.1.2 Advice on general occupational hygiene:

Do not eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities:

Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

7.3 Specific end use(s):

Not applicable.

Section 8 Exposure Controls/Personal Protection

8.1 Control parameters:

8.1.1 Occupational exposure limits: Not listed.

8.1.2 Additional exposure limits under the conditions of use: Not available.

8.2 Exposure controls:

8.2.1 Appropriate engineering controls:

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

8.2.2 Individual protection measures, such as personal protective equipment:

Eye/face protection: Wear appropriate protective eyeglasses or chemical safety goggles.

Hand protection: Wear appropriate gloves to prevent skin exposure.

Body protection: Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Respiratory protection: A self contained breathing apparatus should be used to avoid inhalation of the product.

Thermal hazards: Wear suitable protective clothing to prevent heat.

8.2.3 Environmental exposure controls:

Avoid disposing into drainage/sewer system or directly into the aquatic environment. Handle according to local, state and federal official regulations.

Section 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Appearance:	Liquid
Colour:	Colorless
Odour:	Not available
Odour threshold:	Not available
pH:	Not available
Melting point/range (°C):	-49.8° C
Boiling point/range (°C):	198.9°C
Flash point (°C):	93.3°C (199.94°F)
Evaporation rate:	Not applicable
Flammability limit - lower (%):	Not available
Flammability (solid, gas):	Combustible liquid
Ignition temperature (°C):	Not determined
Upper/lower flammability/explosive limits:	Not available
Vapour pressure (20°C):	Not available
Vapour density:	Not available
Relative Density:	1.055-1.058 (Water = 1)
Bulk density (kg/m ³):	Not available
Water solubility (g/l, 20°C):	Slightly soluble
n-Octanol/Water (log Po/w):	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity, dynamic (mPa.s):	Not determined
Explosive properties:	Not determined
Oxidising properties:	Not applicable
Molecular Formula:	Not available
Molecular Weight:	Not available

9.2. Other information:

Fat solubility(solvent– oil to be specified) etc:	Not available
Surface tension:	Not available
Dissociation constant in water(pKa):	Not available
Oxidation-reduction Potential:	Not available

Section 10 Stability and reactivity

10.1 Reactivity:	The substance is stable under normal storage and handling conditions.
10.2 Chemical stability:	Under normal conditions, the product is stable. No hazardous reaction when handled and stored according to provisions. Hazardous reactions are not known.
10.3 Possibility of hazardous reactions:	Under normal conditions, no hazardous reactions will occur.
10.4 Conditions to avoid:	Heat, ignition sources, incompatible materials
10.5 Incompatible materials:	Reactive with oxidizing agents, reducing agents, acids, alkalis.
10.6 Hazardous decomposition products:	Carbon monoxide, carbon dioxide.

Section 11 Toxicological information

11.1 Information on toxicological effects:

Acute toxicity:

LD50(Oral, Rat): 14,900 uL/kg (American Industrial Hygiene Association Journal)

LD50(Dermal, Rabbit): >16 mL/kg (American Industrial Hygiene Association Journal)

LC50(Inhalation, Rat): Not available

Skin corrosion/Irritation: Not classified

Serious eye damage/irritation: Causes serious eye irritation. (US EPA)

Respiratory or skin sensitization: Not classified

Germ cell mutagenicity: Not classified

Carcinogenicity: Not classified

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as known or anticipated carcinogen by NTP.
OSHA: No ingredient of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity: Not classified

STOT- single exposure: Not classified

STOT-repeated exposure: Not classified

Aspiration hazard: Not classified

Section 12 Ecological information

12.1 Toxicity:

Acute toxicity		Time	Species	Method	Evaluation	Remarks
LC50	N/A	96h	Fish (Fathead minnow)	OECD 203	N/A	N/A
EC50	N/A	48h	Daphnia	OECD 202	N/A	N/A
EC50	N/A	72h	Algae	OECD 201	N/A	N/A

12.2 Persistence and degradability: No data available.

12.3 Bioaccumulative potential: Not available.

12.4 Mobility in soil: Not available.

12.5 Results of PBT&vPvB assessment: Not applicable.

12.6 Other adverse effects: Not applicable.

Section 13 Disposal considerations

13.1 Waste treatment methods: Product: Waste material must be disposed of in accordance with local, state and federal regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

Section 14 Transport information

DOT:

UN number: NA1993

Proper shipping name: Combustible liquid, n.o.s. (diethyl malonate)

Class: Combustible liquid

Packing group: III

Reportable quantity (RQ):

Not regulated for surface transport in non-bulk (<119 gallons) packaging.

IATA:

Not regulated as a dangerous good.

IMDG:

Not regulated as a dangerous good.

Section 15 Regulation information

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

U.S.:

United States TSCA Inventory Status: Listed, Active

SARA 311/312 Hazardous chemical: Yes

SARA 313: This product does not contain a chemical listed at or above de minimis concentrations subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40 CFR 372.

Section 16 Other information

16.1 Indication of changes:

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