

Dimethyl Maleate

99 % min · Liquid · Product Code RS DMM 99

FORMULA	CAS NO.	MOL. WEIGHT	PRODUCT CODE	PRODUCT TYPE	VERSION
$C_6H_8O_4$	624-48-6	144.13	RS DMM 99	Substance, liquid	1.0 · 2026-10-22

Prepared in accordance with the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200 (as amended 2024), aligned to the GHS.

SECTION 1 Identification

PRODUCT IDENTIFIER

Product name	Dimethyl Maleate
Product code	RS DMM 99
Synonyms	Dimethyl (2Z)-but-2-enedioate; 2-butenedioic acid (Z)-, dimethyl ester; maleic acid dimethyl ester; dimethyl cis-butenedioate; DMM.
Formula	$C_6H_8O_4$
CAS No.	624-48-6
Product type	Substance; colorless, transparent liquid.

RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

Recommended use	Resin polymerization comonomer; organic synthesis intermediate (paints, adhesives, copolymers, films, dimethyl succinate); plasticizer; organic solvent. Industrial and professional use.
Uses advised against	Not stated by the producer.

DETAILS OF THE SUPPLIER

Distributor	RawSource Inc.
Address	515 E Las Olas Blvd, Suite 1301, Fort Lauderdale, FL 33301, USA
Telephone	305-307-6515
E-mail	solutions@rawsource.com
Web	rawsource.com

EMERGENCY TELEPHONE NUMBER

24-hour emergency	CHEMTREC +1 (800) 424-9300 (USA and Canada) · +1 (703) 527-3887 (international, collect)
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SECTION 2 Hazards Identification

OSHA/HCS status

This material is classified as hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

HAZARD CLASS	CATEGORY	HAZARD STATEMENT
Flammable liquids	Category 4	H227
Acute toxicity, oral	Category 4	H302
Acute toxicity, dermal	Category 3	H311
Skin sensitization	Category 1	H317
Serious eye damage/eye irritation	Category 2B	H320

Health classification as assigned by the producer. Flammable liquid Category 4 is assigned by RawSource under the HCS on the 91 °C flash point stated in the producer technical data (HCS cut-off 93 °C); the producer safety data sheet states a flash point above 95 °C and carries no flammability class. Environmental hazards: not classified by the producer; outside the scope of the HCS.

GHS LABEL ELEMENTS



SIGNAL WORD
Danger

Hazard statements

H227	Combustible liquid.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H317	May cause an allergic skin reaction.
H320	Causes eye irritation.

Precautionary statements

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P261 Avoid breathing mist, vapors or spray. P264 Wash hands and exposed skin thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P272 Contaminated work clothing should not be allowed out of the workplace. P280 Wear protective gloves/protective clothing/eye protection.

Response

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. P330 Rinse mouth. P302 + P352 IF ON SKIN: Wash with plenty of water. P312 Call a POISON CENTER or doctor if you feel unwell. P321 Specific treatment (see Section 4). P361 + P364 Take off immediately all contaminated clothing and wash it before reuse. P333 + P313 If skin irritation or rash occurs: Get medical advice/attention. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 If eye irritation persists: Get medical advice/attention. P370 + P378 In case of fire: Use dry chemical, alcohol-resistant foam or water spray to extinguish.

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Storage	P403 + P235 Store in a well-ventilated place. Keep cool. P405 Store locked up.
Disposal	P501 Dispose of contents and container in accordance with local, regional, national and international regulations.

HAZARDS NOT OTHERWISE CLASSIFIED

- None identified by the producer.
- Aquatic toxicity: the producer reports acute aquatic toxicity values between 1 and 10 mg/L (Section 12) but assigns no environmental classification. Environmental hazard classes are outside the scope of the HCS; see Section 12 before release to the environment.

SECTION 3 Composition / Information on Ingredients

Substance/mixture	Substance
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INGREDIENT NAME	CAS NUMBER	% W/W	CLASSIFICATION (GHS)
Dimethyl Maleate	624-48-6	99.82	Flam. Liq. 4, H227; Acute Tox. 4 oral, H302; Acute Tox. 3 dermal, H311; Skin Sens. 1, H317; Eye Irrit. 2B, H320

Concentration as stated on the producer safety data sheet; the release specification is 99.00 % minimum purity by GC. Impurities are not identified by the producer.

SECTION 4 First Aid Measures**DESCRIPTION OF NECESSARY FIRST AID MEASURES**

Inhalation	Remove the person to fresh air immediately and keep the airway clear. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration immediately. Get medical attention promptly.
Skin contact	Take off immediately all contaminated clothing. Rinse the skin thoroughly with plenty of running water. Call a POISON CENTER or doctor if you feel unwell. Get medical attention. Wash contaminated clothing before reuse.
Eye contact	Immediately lift the eyelids and rinse thoroughly with plenty of running water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention.
Ingestion	Rinse the mouth with water. Call a POISON CENTER or doctor if you feel unwell. Get medical attention.
Protection of first-aiders	Use personal protective equipment (Section 8). The product is toxic in contact with skin: avoid contact with the material and with contaminated clothing.

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MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED

Inhalation	Cough and throat irritation.
Skin contact	Erythema and irritation; systemic poisoning through skin absorption.
Eye contact	Redness and irritation.
Ingestion	Nausea, vomiting and abdominal pain.
Delayed	Prolonged or repeated skin contact may cause an allergic skin reaction (sensitization).

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED, IF NECESSARY

Notes to physician	Treat symptomatically. No specific antidote or special treatment is stated by the producer.
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SECTION 5
Fire-Fighting Measures
EXTINGUISHING MEDIA

Suitable extinguishing media	Dry chemical powder, alcohol-resistant foam, water spray or water mist.
Unsuitable extinguishing media	Not stated by the producer.
Specific hazards arising from the chemical	Combustible liquid (flash point 91 °C per producer technical data). Burning and decomposition at high temperature release toxic fumes and gases. Vapors may form ignitable mixtures with air above the flash point.
Hazardous combustion products	Carbon oxides and toxic fumes.
Special protective actions for fire-fighters	Approach from upwind. Move containers from the fire area if this can be done without risk. Select the extinguishing agent according to the cause of the fire. Prevent fire-fighting water from entering drains or watercourses.
Special protective equipment for fire-fighters	Wear self-contained breathing apparatus, full fire-fighting clothing and protective gloves.

SECTION 6
Accidental Release Measures
PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

For non-emergency personnel	Keep unnecessary personnel away. Avoid direct contact with the spilled material and avoid breathing vapors or mist. Remove ignition sources.
For emergency responders	Wear respiratory protection and chemical protective clothing (Section 8). Avoid direct contact with the leaked substance.

ENVIRONMENTAL PRECAUTIONS

Isolate the contaminated area and restrict access. Do not allow the product to enter drains, sewers, surface water or soil; the product is toxic to aquatic organisms (Section 12).

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METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

Small spills	Absorb with sand or another inert material and collect into suitable containers for disposal. Keep the product out of sewers and confined areas.
Large spills	Dike the spill or dig a collection pit. Transfer the liquid by pump into tankers or dedicated containers for recycling or for disposal at a waste-treatment facility (Section 13).
Reference to other sections	Personal protective equipment: Section 8. Disposal: Section 13.

SECTION 7 Handling and Storage**PRECAUTIONS FOR SAFE HANDLING**

Protective measures	Handle in closed systems with local exhaust ventilation. Operators must be trained and follow the operating procedures. Wear respiratory protection, chemical safety goggles, protective clothing and chemical-resistant gloves (Section 8). Handle containers carefully during loading and unloading to prevent damage. Keep spill-response equipment available. Keep away from heat, sparks and open flames. Empty containers may retain hazardous residues.
Advice on general occupational hygiene	Wash hands and exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace; wash before reuse.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Store in sealed containers in a cool, dry, well-ventilated warehouse at room temperature, away from heat and ignition sources and protected from direct sunlight. Keep packaging sealed to exclude moisture. Store separately from oxidizers and from flammable or combustible materials. Keep the storage area equipped with spill-containment materials. Store locked up.

SPECIFIC END USE(S)

Resin polymerization comonomer and organic synthesis intermediate (Section 1). No other specific end uses are stated by the producer.

SECTION 8 Exposure Controls / Personal Protection**CONTROL PARAMETERS: OCCUPATIONAL EXPOSURE LIMITS**

INGREDIENT NAME	OSHA PEL	ACGIH TLV	NIOSH REL
Dimethyl Maleate (624-48-6)	None established	None established	None established

No airborne exposure limits are established for dimethyl maleate by OSHA, ACGIH or NIOSH, and the producer gives none. Control exposure to the lowest practicable level; the substance is toxic in contact with skin and a skin sensitizer.

Appropriate engineering controls	Strict enclosure of the process with adequate local exhaust ventilation. Provide an eyewash station and safety shower close to the workstation.
Environmental exposure controls	Prevent release to drains and watercourses. Collect spills and process residues for disposal (Section 13).

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INDIVIDUAL PROTECTION MEASURES

Eye/face protection	Chemical safety goggles (ANSI Z87.1 or equivalent).
Hand protection	Chemical-resistant protective gloves (the producer specifies rubber gloves). Inspect gloves before use and replace them when contaminated; the product is toxic in contact with skin.
Skin and body protection	Chemical protective work clothing. Remove contaminated clothing immediately and wash before reuse.
Respiratory protection	Where vapors or mists are generated or ventilation is inadequate, wear a NIOSH-approved organic-vapor respirator under a respiratory protection program meeting 29 CFR 1910.134. For emergency rescue or evacuation, use a supplied-air respirator.
Hygiene measures	Wash hands, forearms and face thoroughly after handling and before eating, drinking, smoking or using the lavatory.

SECTION 9 Physical and Chemical Properties and Safety Characteristics

Physical state	Liquid.	Decomposition temperature	No information available.
Color	Colorless, transparent.	pH	Not applicable (ester, not an aqueous solution).
Odor	No information available.	Kinematic viscosity	No information available.
Odor threshold	No information available.	Solubility	In water 8.0 % at 25 °C; water in dimethyl maleate 4.4 %. Miscible with a variety of organic solvents; partially soluble in benzene and chloroform.
Melting point / freezing point	-19.0 °C (-2.2 °F) (producer technical data).	Partition coefficient: n-octanol/water (log value)	1.21 (producer).
Boiling point, initial boiling point and boiling range	204 – 205 °C (399 – 401 °F).	Vapor pressure	No information available.
Flammability	Combustible liquid (HCS Flammable Liquid Category 4). Not a flammable liquid (flash point above 60 °C).	Density and/or relative density	Relative density 1.152 (producer safety data sheet); 1.0606 g/mL at 25 °C (producer technical data). The two producer documents disagree.
Lower and upper explosion limit / flammability limit	No information available.	Relative vapor density	No information available.

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Flash point	91 °C (196 °F), producer technical data; above 95 °C (203 °F), producer safety data sheet. Cup type not stated.	Particle characteristics	Not applicable (liquid).
Auto-ignition temperature	No information available.		
Other information	Refractive index 1.4416. Forms an azeotrope with water (87.7 % water) boiling at 99.3 °C. Molecular formula $C_6H_8O_4$, molecular weight 144.13. Evaporation rate, explosive and oxidizing properties: no information available.		

SECTION 10 Stability and Reactivity

Reactivity	Not stated by the producer.
Chemical stability	Stable at room temperature under recommended storage conditions.
Possibility of hazardous reactions	No information available.
Conditions to avoid	High temperature, sparks, open flames and static electricity. Direct sunlight. Moisture.
Incompatible materials	Oxidizers; flammable or combustible substances (producer storage segregation).
Hazardous decomposition products	Carbon oxides. Toxic fumes on combustion.

SECTION 11 Toxicological Information

Information on the likely routes of exposure	Inhalation, ingestion, skin absorption, eye contact.
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ACUTE TOXICITY

INGREDIENT NAME	LD50 ORAL	LD50 DERMAL	LC50 INHALATION
Dimethyl Maleate (624-48-6)	1,635 mg/kg (rat)	610 mg/kg (rabbit)	No information available
Oral LD50 within the Category 4 band (300 to 2,000 mg/kg): harmful if swallowed. Dermal LD50 within the Category 3 band (200 to 1,000 mg/kg): toxic in contact with skin.			
Skin corrosion/irritation	Not classified. Skin contact may cause erythema and irritation (producer).		
Serious eye damage/irritation	Causes eye irritation (Category 2B).		
Respiratory sensitization	No information available.		
Skin sensitization	May cause an allergic skin reaction (Category 1). Prolonged or repeated exposure may cause skin allergy (producer).		
Germ cell mutagenicity	No information available.		
Carcinogenicity	No information available. Not listed as a carcinogen by IARC, NTP, OSHA or ACGIH.		
Reproductive toxicity	No information available.		

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Specific target organ toxicity (single exposure) No information available.

Specific target organ toxicity (repeated exposure) No information available.

Aspiration hazard No information available. Kinematic viscosity not stated.

CARCINOGENICITY CLASSIFICATION

INGREDIENT NAME	OSHA	IARC	NTP	ACGIH
Dimethyl Maleate	Not listed	Not listed	Not listed	Not listed

Symptoms related to the physical, chemical and toxicological characteristics Inhalation: cough, throat irritation. Skin contact: erythema, irritation, systemic poisoning. Eye contact: redness, irritation. Ingestion: nausea, vomiting, abdominal pain.

Delayed and immediate effects and chronic effects from short and long term exposure Prolonged or repeated exposure may cause an allergic skin reaction. No other chronic data from the producer.

SECTION 12 Ecological Information

TOXICITY

ENDPOINT	SPECIES	DURATION	RESULT
LC50	Fish	96 h	3.027 mg/L
EC50	Crustacea	48 h	6.51 mg/L
EC50	Algae or other aquatic plants	96 h	2.014 mg/L
EC10	Algae or other aquatic plants	72 h	1.93 mg/L
NOEC	Crustacea	48 h	2 mg/L

Producer data; species not identified. Acute values between 1 and 10 mg/L meet the GHS Aquatic Acute 2 criterion; the chronic classification depends on biodegradability, which the producer does not quantify. The producer assigns no environmental classification and the HCS does not require one.

Persistence and degradability Producer states 'low'. No biodegradation test data given.

Bioaccumulative potential Low. Log Kow 1.2133 (producer).

Mobility in soil Koc = 10 (producer), which indicates high mobility in soil; the producer sheet describes mobility as low.

Results of PBT and vPvB assessment Not assessed by the producer.

Other adverse effects No information available.

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SECTION 13 Disposal Considerations

Disposal methods

Dispose of unused product and process residues at a permitted waste-disposal facility in accordance with federal, state and local regulations; the producer sheet specifies secure landfill at a designated site. Do not discharge to drains or watercourses. Not a listed RCRA hazardous waste as supplied; the waste generator is responsible for determining the regulatory status of the waste at the time of disposal (40 CFR 261).

Contaminated packaging

Damaged containers must not be reused. Empty containers retain product residues and remain hazardous; dispose of them at a designated site in accordance with federal, state and local requirements.

SECTION 14 Transport Information

	DOT (U.S.)	TDG (CANADA)	IMDG	IATA
UN number	UN 2810	UN 2810	UN 2810	UN 2810
UN proper shipping name	Toxic liquid, organic, n.o.s. (dimethyl maleate)	Toxic liquid, organic, n.o.s. (dimethyl maleate)	TOXIC LIQUID, ORGANIC, N.O.S. (DIMETHYL MALEATE)	Toxic liquid, organic, n.o.s. (dimethyl maleate)
Transport hazard class(es)	6.1	6.1	6.1	6.1
Packing group	III	III	III	III
Environmental hazards / marine pollutant	No	No	No	No

Labels / placards

Class 6.1 TOXIC label. Placard TOXIC (POISON) per 49 CFR 172.504 when required by quantity.

ERG guide number

153.

IMDG EmS

F-A, S-A.

Special precautions for user

Toxic in contact with skin; segregate from foodstuffs. Transport vehicles should carry fire-fighting and spill-response equipment. Check that containers are intact and sealed before loading. Keep away from heat and ignition sources.

Transport in bulk according to IMO instruments

Not stated by the producer.

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SECTION 15 Regulatory Information
UNITED STATES: U.S. FEDERAL REGULATIONS

OSHA regulatory status	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
TSCA Inventory	Listing status of CAS 624-48-6 is not stated by the producer. Confirmed by RawSource before import.
TSCA 12(b) export notification	Not listed.
SARA 302 extremely hazardous substances	Not listed.
SARA 311/312 hazard categories	Flammable (gases, aerosols, liquids, or solids); acute toxicity (any route of exposure); respiratory or skin sensitization; serious eye damage or eye irritation.
SARA 313 toxic release inventory	Not listed.
CERCLA hazardous substances (40 CFR 302.4)	Not listed.

UNITED STATES: STATE REGULATIONS

California Proposition 65	Not listed.
State right-to-know lists	Not stated by the producer. Verify against the New Jersey, Pennsylvania and Massachusetts lists before shipment to those states.

CANADA

WHMIS 2015 classification	Flammable Liquids 4 (H227), Acute Tox. 4 oral (H302), Acute Tox. 3 dermal (H311), Skin Sens. 1 (H317), Eye Irrit. 2B (H320). This SDS has been prepared in accordance with the hazard criteria of the Hazardous Products Regulations and contains all the information required by them.
Domestic Substances List (DSL)	Not stated by the producer; verify before shipment to Canada.

OTHER JURISDICTIONS

China	Producer classification under GB 30000 (GHS): Acute Tox. 4 oral, Acute Tox. 3 dermal, Eye Irrit. 2B, Skin Sens. 1; producer safety data sheet prepared to GB/T 16483.
Harmonized System code	2917.19 (esters of unsaturated acyclic polycarboxylic acids), producer technical data.
International inventories	Not stated by the producer; contact RawSource for inventory compliance status.

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HAZARD RATINGS

NFPA 704

Health 3 · Flammability 2 · Instability 0

HMIS III

Health 3* · Flammability 2 · Physical hazard 0 (* chronic hazard: skin sensitizer)

SECTION 16 Other Information

PROCEDURE USED TO DERIVE THE CLASSIFICATION

CLASSIFICATION	JUSTIFICATION
Flam. Liq. 4 (H227)	RawSource assignment under the HCS: flash point 91 °C (producer technical data), within the 60 °C to 93 °C Category 4 band. Producer SDS states above 95 °C and carries no flammability class.
Acute Tox. 4, oral (H302)	Producer classification; LD50 oral rat 1,635 mg/kg (300 to 2,000 mg/kg band).
Acute Tox. 3, dermal (H311)	Producer classification; LD50 dermal rabbit 610 mg/kg (200 to 1,000 mg/kg band).
Skin Sens. 1 (H317)	Producer classification; no test data given.
Eye Irrit. 2B (H320)	Producer classification; no test data given.
Physical hazard classes: other	Not classified; no data.
Environmental hazard classes	Not classified by the producer; outside HCS scope. Producer ecotoxicity data in the 1 to 10 mg/L range.

HISTORY

Issue date	2026-10-22
Version	1.0
Revision note	First RawSource issue to OSHA HCS 2024, from the producer safety data sheet (Chinese GB/T 16483 format, dated 16 August 2024) and the producer technical data sheet.
Prepared by	RawSource Inc., solutions@rawsource.com, 305-307-6515
Key data sources	Producer safety data sheet and technical data sheet; U.S. OSHA, NIOSH and ACGIH exposure-limit databases; U.S. EPA CERCLA list (40 CFR 302.4); U.S. DOT 49 CFR and the Emergency Response Guidebook; IMDG Code.

KEY TO ABBREVIATIONS

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstracts Service registry number
EC50 / EC10 / LC50 / LD50	Median (10 %) effective concentration / median lethal concentration / median lethal dose
EmS	IMDG emergency schedule
ERG	Emergency Response Guidebook
GHS	Globally Harmonized System of Classification and Labelling of Chemicals

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HCS	OSHA Hazard Communication Standard, 29 CFR 1910.1200
Koc / Kow	Soil organic carbon–water / n–octanol–water partition coefficient
NIOSH	National Institute for Occupational Safety and Health
NOEC	No observed effect concentration
PBT / vPvB	Persistent, bioaccumulative and toxic / very persistent and very bioaccumulative

The information in this Safety Data Sheet is based on data supplied by the producer and on other sources believed to be reliable as of the issue date. It is provided as guidance for safe handling, use, storage, transport and disposal and is not a specification or warranty of product properties. Users should make their own determination of the suitability of this information for their purposes and comply with all applicable laws and regulations. RawSource Inc. assumes no liability for loss, damage or expense arising from the handling or use of this product.