

SAFETY DATA SHEET

Issue Date 25-Jun-2026
Revision Number 1.09

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Dimethyl 2,2'-Azobis(isobutyrate)
Other means of identification
Product Code(s) 043-28532,047-28535

Recommended use of the chemical and restrictions on use

Recommended Use For research use only.
Uses advised against Seek expert judgment when using for purposes other than those recommended.

Details of the supplier of the safety data sheet

Manufacturer Address	Distributor
FUJIFILM Wako Pure Chemical Corporation	FUJIFILM Biosciences Inc.
1-2, Doshomachi 3-Chome,	2501 Pullman Street, Suite 200
Chuo-ku Osaka 540-8605, Japan	Santa Ana, CA 92705, U.S.A.
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2. HAZARDS IDENTIFICATION

GHS classification**Classification of the substance or mixture****Self-reactive substances and mixtures****Acute toxicity - Oral****Serious eye damage/eye irritation****Skin sensitization****Reproductive Toxicity**

Type D
Category 4
Category 2B
Category 1
Category 1A

Pictograms**Signal word**

Danger

Hazard statements

H242 - Heating may cause a fire
H320 - Causes eye irritation
H302 - Harmful if swallowed
H360 - May damage fertility or the unborn child
H317 - May cause an allergic skin reaction

Precautionary statements-(Prevention)

Obtain special instructions before use Do not handle until all safety precautions have been read and understood Use personal protective equipment as required Do not eat, drink or smoke when using this product Wash face, hands and any exposed skin thoroughly after handling Avoid breathing dust/fume/gas/mist/vapors/spray Contaminated work clothing should not be allowed out of the workplace Wear protective gloves Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking Keep/Store away from clothing/ combustible materials Keep only in original container

Precautionary statements-(Response)

IF exposed or concerned: Get medical advice/attention

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 ON SKIN: Wash with plenty of soap and water If skin irritation or rash occurs: Get medical advice/attention Wash contaminated clothing before reuse

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell Rinse mouth

In case of fire: Use Water spray, fog or regular foam for extinction

Precautionary statements-(Storage)

Store locked up Store in a well-ventilated place. Keep cool Store away from other materials

Precautionary statements-(Disposal)

Dispose of contents/container to an approved waste disposal plant

Others

Other hazards Not available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Single Substance or Mixture Substance

Formula C₁₀H₁₈N₂O₄

Chemical Name	Molecular weight	CAS RN	Weight-%
Dimethyl 2,2'-azobis(2-methylpropionate)	230.26	2589-57-3	97.0
Toluene	92.14	108-88-3	0.8

Impurities and/or Additives: residue :, Toluene 0.8 %

4. FIRST AID MEASURES

First aid measures

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water.

Inhalation Remove to fresh air.

Ingestion Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing media

Water. Foam.

Unsuitable Extinguishing media Powder. Carbondioxide.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Explosion data

Sensitivity to Mechanical Impact none.
Sensitivity to Static Discharge none.

Protective equipment and precautions for firefighters

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions, protective equipment and emergency procedures Ensure adequate ventilation, especially in confined areas.

Environmental precautions

Environmental precautions See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods and material for containment and cleaning up Sweep up and gather scattered particles, and collect it in an empty airtight container.

Methods for cleaning up Use personal protective equipment as required. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Take up mechanically, placing in appropriate containers for disposal. Avoid creating dust. Clean contaminated surface thoroughly.

Prevention of secondary hazards Container containing the recovered material is distinguished from the other garbage and store in a cool, dark place without sealed until processing. Use a secure tool that does not generate a spark.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical measures Do not give shock. Avoid contact with strong oxidizing agents.
Protective measures Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage conditions Keep container protect from light tightly closed. Store in a cool (2-10 °C) place.

Packaging materials Polyethylene.

Incompatible materials Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

Exposure limits Not applicable

Chemical Name	ACGIH	OSHA PEL	NIOSH IDLH
Toluene 108-88-3	TWA: 20 ppm	TWA: 200 ppm (vacated) TWA: 100 ppm (vacated) TWA: 375 mg/m ³	IDLH: 500 ppm TWA: 100 ppm TWA: 375 mg/m ³

		(vacated) STEL: 150 ppm (vacated) STEL: 560 mg/m ³ Ceiling: 300 ppm	STEL: 150 ppm STEL: 560 mg/m ³
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Personal protective equipment**Respiratory protection**

Dust mask (JIS T 8151)

Hand protection

chemical protective gloves (JIS T 8116)

Eye protection

protective eyeglasses or chemical safety goggles (JIS T 8147)

Skin and body protection

Long-sleeved work clothes

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form**Color**

White - slightly yellow

Appearance

flakes

Odor

characteristic odor

pH

no data available

Melting point/freezing point

22 - 28 °C

Boiling point, initial boiling point and boiling range

no data available

Flash point

no data available

Evaporation rate:

no data available

Flammability (solid, gas):

no data available

Upper/lower flammability or explosive limits**Upper:**

no data available

Lower:

no data available

Vapour pressure

no data available

Vapour density

no data available

Specific Gravity / Relative density

1.013

Solubilitieswater : insoluble . . benzene , Ethanol ,
N,N-Dimethylformamide , dioxane , DMSO : freely soluble .
methanol , toluene , chloroform , hexane : soluble .**n-Octanol/water partition coefficient:(log Pow)**

no data available

Auto-ignition temperature:

no data available

Decomposition temperature:

35 °C (SADT)

Viscosity (coefficient of viscosity)

no data available

Dynamic viscosity

no data available

Particle characteristics

no data available

10. STABILITY AND REACTIVITY

Stability**Chemical stability**

Stable under recommended normal conditions.

Reactivity

no data available

Hazardous reactions

Decompose at an accelerating pace and discharge nitrogen gas. May cause runaway reaction by heat or sunlight because of self-reactivity. Decompose gradually if stored it higher than 15°C.

Conditions to avoid

Extremes of temperature and direct sunlight, Heat, flames and sparks, static electricity, spark

Incompatible materials

Strong oxidizing agents

Hazardous decomposition productsCarbon monoxide (CO), Carbon dioxide (CO₂), Nitrogen oxides (NO_x), nitrogen gas

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Dimethyl 2,2'-azobis(2-methylpropionate)	527mg/kg(Rat)	N/A	2.034mg/l/4h(Rat)
Toluene	5000 mg/kg (Rat)	12000 mg/kg (Rat)	7460 ppm (Rat) 4 h (vapor)

Chemical Name	Acute toxicity -oral- source information	Acute toxicity -dermal- source information	Acute toxicity -inhalation gas- source information
Toluene	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Chemical Name	Acute toxicity -inhalation vapor- source information	Acute toxicity -inhalation dust- source information	Acute toxicity -inhalation mist- source information
Toluene	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Skin irritation/corrosion

Chemical Name	Skin corrosion/irritation source information
Dimethyl 2,2'-azobis(2-methylpropionate)	Skin irritation; rabbit; Mild.
Toluene	Based on the NITE GHS classification results.

Serious eye damage/ irritation

Chemical Name	Serious eye damage/irritation source information
Dimethyl 2,2'-azobis(2-methylpropionate)	Eye; rabbit; 2.86 (Draiz method; conjunctiva)
Toluene	Based on the NITE GHS classification results.

Respiratory or skin sensitization

Chemical Name	Respiratory or Skin sensitization source information
Dimethyl 2,2'-azobis(2-methylpropionate)	Skin sensitization is confirmed by the animal test using guinea pig.
Toluene	Based on the NITE GHS classification results.

Reproductive cell mutagenicity

Chemical Name	germ cell mutagenicity source information
Dimethyl 2,2'-azobis(2-methylpropionate)	Reverse mutation assay in S.typhimurium and E.coli Positive 29rev./mg Micronucleus test :Genetically toxic
Toluene	Based on the NITE GHS classification results.

Carcinogenicity

Chemical Name	Carcinogenicity source information
Toluene	Based on the NITE GHS classification results.

Chemical Name	NTP	IARC	ACGIH	JSOH
Toluene 108-88-3	N/A	Group 3	N/A	N/A

Reproductive toxicity

Chemical Name	Reproductive toxicity source information
Toluene	Based on the NITE GHS classification results.

STOT-single exposure

Chemical Name	STOT -single exposure- source information
Toluene	Based on the NITE GHS classification results.

STOT-repeated exposure

Chemical Name	STOT -repeated exposure- source information
Toluene	Based on the NITE GHS classification results.

Aspiration hazard

Chemical Name	Aspiration Hazard source information
Toluene	Based on the NITE GHS classification results.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Dimethyl 2,2'-azobis(2-methylpropionate) 2589-57-3	EC50 : Desmodesmus subspicatus >100 mg/L 72 h	LC50 : Danio rerio 56 µg/L 96 h	N/A	EC50 : daphnia magna >100 mg/L 48 h
Toluene 108-88-3	EC50 : Pseudokirchneriella subcapitata 433 mg/L 96 h	LC50 : Pimephales promelas 15.22 - 19.05 mg/L 96 h	N/A	EC50 : Ceriodaphnia dubia 3.78 mg/L 48 h

Persistence and degradability

No information available

Bioaccumulative potential

No information available

Mobility

no data available

Chemical Name	Partition coefficient
Dimethyl 2,2'-azobis(2-methylpropionate) 2589-57-3	2.47
Toluene 108-88-3	2.73

Mobility in soil

No information available

Other Data

No information available

13. DISPOSAL CONSIDERATIONS**Waste treatment methods****Disposal of wastes**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Precautionary including method of disposing contaminated packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION**DOT**

UN/ID No UN3236
 Proper shipping name: Self-reactive solid type D, temperature controlled (Dimethyl 2,2'-azobis(2-methylpropanoate))
 UN classification 4.1
 Subsidiary hazard class
 Packing group
 Marine pollutant Not applicable

IATA

UN/ID No UN3236
 Proper shipping name: Self-reactive solid type D, temperature controlled (Dimethyl 2,2'-azobis(2-methylpropanoate))
 UN classification 4.1
 Subsidiary hazard class
 Packing group
 Environmentally Hazardous Substance Not applicable

IMDG

UN/ID No UN3236
Proper shipping name: Self-reactive solid type D, temperature controlled (Dimethyl 2,2'-azobis(2-methylpropanoate))
UN classification 4.1
Subsidiary hazard class
Packing group
Marine pollutant (Sea) Not applicable

15. REGULATORY INFORMATION

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS RN	Weight-%	SARA 313 - Threshold Values %
Dimethyl 2,2'-azobis(2-methylpropanoate) - 2589-57-3	2589-57-3	97.0	N/A
Toluene - 108-88-3	108-88-3	0.8	1.0

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Toluene 108-88-3	1000 lb	X	X	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Toluene 108-88-3	1000 lb	N/A	RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations**California Proposition 65**

This product does not contain any chemicals regulated by Proposition 65

Chemical Name	California Proposition 65
Toluene - 108-88-3	Developmental

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated by state right-to-know regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Toluene 108-88-3	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

Issue Date 25-Jun-2026

Revision Note

No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet