

SAFETY DATA SHEET

SECTION 1: Identification of the hazardous chemical and of the supplier

Product identifier

Product Name
Additive

Other means of identification

Product Code(s) A152
Pure substance/mixture Mixture

Details of the supplier of the safety data sheet

Supplier Address
Company

China Emergency Telephone Number
+86 020-32954560

Recommended use of the chemical and restrictions on use

Recommended use Additive

Restrictions on use No information available

Section 2: Hazard identification

Emergency Overview

Irritating to eyes
Contains a known or suspected carcinogen
Vapors may cause drowsiness and dizziness

HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames

Color colorless

Physical state Liquid

Odor Solvent

Classification of the substance or mixture

| | |
|--|-------------|
| Flammable liquids | Category 2 |
| Acute toxicity - Oral | Category 5 |
| Acute toxicity - Dermal | Category 5 |
| Serious eye damage/eye irritation | Category 2A |
| Carcinogenicity | Category 2 |
| Specific target organ toxicity - Single exposure | Category 3 |

Label elements



Signal word

Danger

Hazard statements

Highly flammable liquid and vapor
May be harmful if swallowed
May be harmful in contact with skin
Causes serious eye irritation
Suspected of causing cancer
May cause drowsiness or dizziness

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
Wash face, hands and any exposed skin thoroughly after handling
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ ventilating / lighting / equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool

Response

IF exposed or concerned: Get medical advice/attention
IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
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
In case of fire: Use CO₂, dry chemical, or foam for extinction

Storage

Store locked up
Store in a well-ventilated place. Keep container tightly closed
Keep container tightly closed

Disposal

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Physical and chemical hazards

Highly flammable liquid and vapor. Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors can travel considerable distances to a source of ignition where they can ignite, flash back, or explode. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated.

Health hazards

Immediate Health Effects: If large quantities of this material are swallowed, call a physician immediately. If symptoms persist, call a physician. Causes severe irritation (tears, blurred vision and redness). Irritating, but will not permanently injure eye tissue. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Chronic effects: Contains a known or suspected carcinogen.

Environmental hazards

Not applicable

Other hazards which do not result in classification

Repeated exposure may cause skin dryness or cracking

Section 3: Composition and information on ingredients

Substance

Not applicable.

Mixture

Chemical nature

Preparation.

| Chemical name | Weight-% | CAS No |
|------------------------|----------|----------|
| Methyl ethyl ketone | 90 - 100 | 78-93-3 |
| Methyl isobutyl ketone | 1 - 5 | 108-10-1 |

Section 4: First-aid measures

Description of necessary first aid measures

General advice

IF exposed or concerned: Get medical advice/attention. Show this safety data sheet to the doctor in attendance.

Inhalation

Remove to fresh air. IF exposed or concerned: Get medical advice/attention.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Skin contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Ingestion

Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.

Most important symptoms/effects, acute and delayed

Burning sensation. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

For emergency responders

Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use

personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Note to physicians

Treat symptomatically.

Section 5: Fire-fighting measures

Extinguishing media

Suitable Extinguishing Media Dry chemical. Carbon dioxide (CO₂). Water spray. Alcohol resistant foam.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective actions for fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and material for containment and cleaning up Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Other information Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

Section 7: Handling and storage

Precautions for safe handling Use personal protection equipment. Avoid breathing vapors or mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. In

case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. See Section 8 for information on appropriate personal protective equipment.

Conditions for safe storage, including any incompatibilities

Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible materials

None known based on information supplied.

SECTION 8: Exposure controls and personal protection

Occupational exposure limits

| Chemical name | China | ACGIH TLV |
|--|---|-------------------------------|
| Methyl ethyl ketone 78-93-3 (90 - 100) | TWA: 300 mg/m ³ STEL: 600 mg/m ³ | STEL: 300 ppm TWA: 200 ppm |
| Methyl isobutyl ketone 108-10-1 (1 - 5) | - | STEL: 75 ppm TWA: 20 ppm |

Biological occupational exposure limits

No data available

| Chemical name | Biological standards | Monitoring and observation processes | ACGIH |
|--------------------------------------|----------------------|--------------------------------------|--------|
| Methyl ethyl ketone - 78-93-3 | | | 2 mg/L |
| Methyl isobutyl ketone - 108-10-1 | | | 1 mg/L |

Monitoring and observation processes

No applicable information was found.

Engineering controls

Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles). If splashes are likely to occur, wear safety glasses with side-shields.

Skin and body protection

Wear suitable protective clothing.

Hand protection

Wear suitable gloves. Impervious gloves.

Respiratory protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations

Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

| | |
|----------------|--------------------------|
| Appearance | |
| Color | colorless |
| Physical state | Liquid |
| Odor | Solvent |
| Odor threshold | No information available |

| <u>Property</u> | <u>Values</u> | <u>Remarks • Method</u> |
|---|-------------------|-------------------------|
| pH | Not applicable | |
| Melting point / freezing point | -80 °C | |
| Initial boiling point and boiling range | 75 °C | |
| Flash point | -9 °C | |
| Evaporation rate | No data available | None known |
| Flammability | No data available | None known |
| Flammability Limit in Air | | None known |
| Upper flammability or explosive limits | 11.5 | |
| Lower flammability or explosive limits | 1.2 | |
| Vapor pressure | No data available | None known |
| Relative vapor density | No data available | None known |
| Relative density | 0.81 | |
| Water solubility | partly soluble | |
| Solubility(ies) | No data available | None known |
| Partition coefficient | log P(o/w) = 0.26 | |
| Autoignition temperature | 450 °C | |
| Hyphen | No data available | None known |
| Kinematic viscosity | No data available | None known |
| Dynamic viscosity | No data available | None known |

Additional information

| | |
|----------------------|--------------------------|
| Explosive properties | No information available |
| Oxidizing properties | No information available |

Section 10: Stability and reactivity

| | |
|------------------|---------------------------------|
| <u>Stability</u> | Stable under normal conditions. |
|------------------|---------------------------------|

| | |
|---|-------------------------------|
| <u>Possibility of hazardous reactions</u> | None under normal processing. |
|---|-------------------------------|

Sensitivity to mechanical impact None.

Sensitivity to static discharge Yes.

| | |
|--------------------------|-----|
| Hazardous polymerization | no. |
|--------------------------|-----|

| | |
|----------------------------|--------------------------|
| <u>Conditions to avoid</u> | Heat, flames and sparks. |
|----------------------------|--------------------------|

| | |
|-------------------------------|---|
| <u>Incompatible materials</u> | None known based on information supplied. |
|-------------------------------|---|

| | |
|---|-------|
| <u>Hazardous decomposition products</u> | none. |
|---|-------|

Section 11: Toxicological information

Acute toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

| | |
|---------------------------|----------------|
| ATEmix (oral) | 3,440.60 mg/kg |
| ATEmix (dermal) | 4,971.80 mg/kg |
| ATEmix (inhalation-vapor) | 1,160.00 mg/l |

Unknown acute toxicity

- 0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
- 0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
- 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
- 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
- 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|------------------------|----------------------|-------------------------|-----------------------------|
| Methyl ethyl ketone | 2483 mg/kg (Rat) | = 5000 mg/kg (Rabbit) | = 11700 ppm (Rat) 4 h |
| Methyl isobutyl ketone | = 2080 mg/kg (Rat) | = 3000 mg/kg (Rabbit) | 2000 - 4000 ppm (Rat) 4 h |

Skin corrosion/irritation May cause skin irritation.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye irritation.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity Classification based on data available for ingredients.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Chemical name | China | IARC |
|------------------------|-------|----------|
| Methyl isobutyl ketone | - | Group 2B |

Legend

IARC (International Agency for Research on Cancer)

Group 2B - Possibly Carcinogenic to Humans

Reproductive toxicity No information available.

Specific target organ toxicity (single exposure) May cause drowsiness or dizziness.

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

Target organ effects Central nervous system. Eyes. Kidney. Liver. Respiratory system. Skin.

Aspiration hazard No information available.

Section 12: Ecological information

Ecotoxicity

Unknown aquatic toxicity 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

| Chemical name | Algae/aquatic plants | Fish | Crustacea |
|---------------|----------------------|------|-----------|
|---------------|----------------------|------|-----------|

| | | | |
|------------------------|---|--|---|
| Methyl ethyl ketone | - | LC50: 3130 - 3320mg/L (96h, Pimephales promelas) | EC50: >520mg/L (48h, Daphnia magna) EC50: =5091mg/L (48h, Daphnia magna) EC50: 4025 - 6440mg/L (48h, Daphnia magna) |
| Methyl isobutyl ketone | EC50: =400mg/L (96h, Pseudokirchneriella subcapitata) | LC50: 496 - 514mg/L (96h, Pimephales promelas) | EC50: = 170mg/L (48h, Daphnia magna) |

Persistence and degradability No information available.

Bioaccumulative potential There is no data for this product.

Component Information

| Chemical name | Partition coefficient |
|------------------------|-----------------------|
| Methyl ethyl ketone | 0.3 |
| Methyl isobutyl ketone | 1.9 |

Mobility in soil No information available.

SECTION 13: Disposal information

Waste chemicals Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

SECTION 14: Transportation information

IMDG

UN number or ID number UN1224
UN proper shipping name Ketones, liquid, n.o.s. (methyl ethyl ketone / methyl isobutyl ketone mixture)
Transport hazard class(es) 3
Packing group II
EmS-No F-E, S-D
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code No information available

IATA

UN number or ID number UN1224
UN proper shipping name Ketones, liquid, n.o.s. (methyl ethyl ketone / methyl isobutyl ketone mixture)
Transport hazard class(es) 3
Packing group II

UN number or ID number UN1224
UN proper shipping name Ketones, liquid, n.o.s. (methyl ethyl ketone / methyl isobutyl ketone mixture)

Special precautions for user

Please refer to the applicable dangerous goods regulations for additional information

Section 15: Regulatory information

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

National regulations

Law of the People's Republic of China on Prevention and Control of Occupational Diseases

Catalog of occupational hazard factors:

Listed. Chemical hazards.

Catalog of occupational diseases:

Listed. Occupational poisoning.

| Chemical name | Category |
|---------------------|------------------|
| Methyl ethyl ketone | Chemical hazards |

Regulations on the Control over Safety of Hazardous Chemicals

Inventory of hazardous chemicals

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed. Verify that license requirements are met.

Flammable liquid - Category 2 Weight-% 100

| Chemical name | Inventory of hazardous chemicals |
|------------------------|----------------------------------|
| Methyl ethyl ketone | Listed |
| Methyl isobutyl ketone | Listed |

GB 18218-2009 Identification of major hazard installations for dangerous chemicals

Category

Flammable liquids

Threshold quantity (T)

1000

List of hazardous chemicals under priority management

Not applicable

Regulations on Labor Protection in Workplaces Where Toxic Substances Are Used

Inventory of highly toxic goods

Not applicable

Regulations for Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals

List of toxic chemicals severely restricted for import and export in China

Not applicable

Measures for the Environmental Management of New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

Contact supplier for inventory compliance status.

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Section 16: Other information

Issuing Date 30-Jun-2023

Revision date 30-Jun-2023

Revision Note The symbol (*) in the margin of this SDS indicates that this line has been revised.

Abbreviations and acronyms

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

| | | | |
|---------|-----------------------------|------|----------------------------------|
| TWA | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| Ceiling | Maximum limit value | * | Skin designation |
| C | Carcinogen | | |

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)

U.S. Environmental Protection Agency ChemView Database

European Food Safety Authority (EFSA)

EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

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