

SAFETY DATA SHEET

According to GB/T 16483 and GB/T 17519

MR·TEK
Excel in Specialty Chemicals

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

- Trade name TRIBUTYL METHYL AMMONIUM BISTRIFLIMIDATE
- CAS-No. 405514-94-5
- Product code: BW 4500

1.2 Relevant identified uses of the substance or mixture and uses advised against Uses of the Substance/Mixture

- Catalysis

1.3 Details of the supplier of the safety data sheet

Company Mingrang Tek (shanghai) Co., Ltd
E-mail address Info@mingrang-tek.com

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Appearance

Form: Crystals
Physical state: solid
Colour: off-white

Harmful if swallowed., May be harmful in contact with skin., Suspected of damaging fertility or the unborn child., Causes damage to organs (Endocrine system) through prolonged or repeated exposure., Harmful to aquatic life with long lasting effects.

GHS Classification and Labeling: Follow GB 13690, GB 15258 and GB 30000.2 to GB 30000.29 (GHS 2011)

Acute toxicity, Category 4	H302: Harmful if swallowed.
Acute toxicity, Category 5	H313: May be harmful in contact with skin.
Reproductive toxicity, Category 2	H361: Suspected of damaging fertility or the unborn child.
Specific target organ toxicity - repeated exposure Category 1	H372: Causes damage to organs through prolonged or repeated exposure. (Endocrine system)
Short-term (acute) aquatic hazard, Category 3	H402: Harmful to aquatic life.
Long-term (chronic) aquatic hazard, Category 3	H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

GHS Classification and Labeling: Follow GB 13690, GB 15258 and GB 30000.2 to GB 30000.29 (GHS 2011)

Hazardous products which must be listed on the label

CAS-No. 405514-94-5 Tributylmethylammonium bis(trifluoromethanesulfonyl)imide

Pictogram



Signal word

- Danger

Hazard statements

- H302 Harmful if swallowed.
- H313 May be harmful in contact with skin.
- H361 Suspected of damaging fertility or the unborn child.
- H372 Causes damage to organs (Endocrine system) through prolonged or repeated exposure.
- H412 Harmful to aquatic life with long lasting effects.

Precautionary statementsGeneral

- None

Prevention

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
- P312 Call a POISON CENTER/ doctor if you feel unwell.

Storage

- P405 Store locked up.

Disposal

- P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards which do not result in classification None known.

SECTION 3: Composition/information on ingredients**3.1 Substance****Information on Components and Impurities**

Chemical name	CAS-No.	Identification number	GHS Classification	Concentration [%]
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Tributylmethylammonium bis(trifluoromethanesulfonyl)imide	405514-94-5	Not applicable	Acute toxicity, Category 4; H302 Acute toxicity, Category 5; H313 Reproductive toxicity, Category 2; H361 Specific target organ toxicity - repeated exposure, Category 1; H372 (Endocrine system) Short-term (acute) aquatic hazard, Category 3; H402 Long-term (chronic) aquatic hazard, Category 3; H412	>= 99 - <= 100
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For the full text of the H -Statements mentioned in this Section, see Section 16.

3.2 Mixture

- Not applicable, this product is a substance.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

- Show this safety data sheet to the doctor in attendance.
- First aider needs to protect himself.
- Place affected clothing in a sealed bag for subsequent decontamination.

In case of inhalation

- Move to fresh air.
- Keep at rest.
- Consult a physician.

In case of skin contact

- Take off contaminated clothing and shoes immediately.
- Wash off with plenty of water.
- Wash immediately and thoroughly for a prolonged period (at least 15 minutes). - Call a physician if irritation develops or persists.

In case of eye contact

- Rinse with running water whilst keeping the eyes wide open (at least 15 minutes)

In case of ingestion

- Do NOT induce vomiting.
- Do not give anything to drink.
- Obtain medical attention.

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

no data available **4.3 Indication of any immediate medical attention and special treatment needed**

- no data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

- All extinguishing agents can be used. **Suitable extinguishing media**

Unsuitable extinguishing media

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special hazards arising from the substance or mixture

- Liberates poisonous gas.

5.3 Advice for firefighters

Special protective equipment for firefighters

- Self-contained breathing apparatus (EN 133) **Specific fire fighting methods**
- Use appropriate means for fighting adjacent fires.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Avoid contact with the skin and the eyes.
- Wear suitable protective equipment.
- Do not allow uncontrolled discharge of product into the environment. - Safety glasses
- Wear suitable gloves.
- Collect spillage.

6.2 Environmental precautions

- Prevent product from entering sewage system.

6.3 Methods and materials for containment and cleaning up

Recovery

- Keep in properly labelled containers.

Decontamination/cleaning -

Wash off with plenty of water.

Disposal

- Dispose of contents/ container to an approved waste disposal plant.

Additional advice

- Remove all incompatible materials as quickly as possible

6.4 Reference to other sections

- no data available

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SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Do not get in eyes or mouth or on skin. - Provide for appropriate exhaust ventilation and dust collection at machinery.

Hygiene measures

- Emergency equipment immediately accessible, with instructions for use.
- Ensure that eyewash stations and safety showers are close to the workstation location.
- Regular cleaning of equipment, work area and clothing.
- Use clean, well-maintained personal protection equipment.
- Store personal protection equipment in a clean location away from the work area.
- Keep working clothes separately.
- Contaminated work clothing should not be allowed out of the workplace.
- Contaminated clothing must never be washed or reused.
- Wash hands before breaks and immediately after handling the product.
- Shower or bathe at the end of working.
- When using do not eat, drink or smoke.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

- The floor of the depot should be impermeable and designed to form a water-tight basin.
- Store in a cool well-ventilated dry place.
- Keep away from: Strong oxidizing agents

Packaging material

Suitable material

- Polyethylene

Remarks

- Store in original container.

7.3 Specific end use(s)

- no data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

- We are not aware of any national exposure limit.
- Contains no substances with occupational exposure limit values above their regulatory reporting threshold.

8.2 Exposure controls Control measures

Engineering measures

- Provide adequate ventilation.

Individual protection measures

Respiratory protection

- Use a respirator with an approved filter if a risk assessment indicates this is necessary.

Hand protection

- Where there is a risk of contact with hands, use appropriate gloves
- The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.
- Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
- Gloves must be inspected prior to use.
- Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Impervious gloves

Eye protection

- Safety glasses
- Face-shield

Skin and body protection

- Protective suit

Hygiene measures

- Emergency equipment immediately accessible, with instructions for use.
- Ensure that eyewash stations and safety showers are close to the workstation location.
- Regular cleaning of equipment, work area and clothing.
- Use clean, well-maintained personal protection equipment.
- Store personal protection equipment in a clean location away from the work area.
- Keep working clothes separately.
- Contaminated work clothing should not be allowed out of the workplace.
- Contaminated clothing must never be washed or reused.
- Wash hands before breaks and immediately after handling the product.
- Shower or bathe at the end of working.
- When using do not eat, drink or smoke.

Protective measures

- The protective equipment must be selected in accordance with current CEN standards and in cooperation with the supplier of the protective equipment.
- Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the potential hazards and/or risks that may occur during use.

Environmental exposure controls

- Prevent product from entering sewage system.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

<u>Appearance</u>	<u>Form:</u> Crystals
	<u>Physical state:</u> solid
	<u>Colour:</u> off-white
<u>Odour</u>	No data available
<u>Odour Threshold</u>	No data available
<u>Molecular weight</u> <u>pH</u>	480.5 g/mol
<u>Melting point/freezing point</u>	4.7 - 5.3 saturated aqueous solution <u>Melting point/range:</u> 27.5 °C
<u>Initial boiling point and boiling range</u>	<u>Boiling point/boiling range:</u> > 429 °C
<u>Flash point</u>	No data available
<u>Evaporation rate (Butylacetate = 1)</u>	No data available
<u>Flammability (solid, gas)</u>	No data available
<u>Flammability (liquids)</u>	No data available
<u>Flammability/Explosive limit</u>	No data available
<u>Auto-ignition temperature</u>	No data available
<u>Vapour pressure</u>	negligible 0.13 hPa (270 °C)
<u>Vapour density</u>	No data available
<u>Density</u>	
<u>Relative density</u>	1.26 (25 °C)
<u>Solubility</u>	<u>Water solubility:</u> insoluble <u>Solubility in other solvents:</u> Ethyl acetate : > 800 g/l Toluene : 1.8 g/l
<u>Partition coefficient: n-octanol/water</u>	No data available
<u>Decomposition temperature</u>	240.33 °C
<u>Viscosity</u>	<u>Viscosity, dynamic :</u> 531 mPa.s (25 °C)

Explosive properties

No data available

Oxidizing properties

No data available

9.2 Other information**Surface tension**

30.6 mN/m (25 °C)

SECTION 10: Stability and reactivity**10.1 Reactivity**

- no data available

10.2 Chemical stability

- Stable at room temperature.

10.3 Possibility of hazardous reactions

- no data available

10.4 Conditions to avoid

- no data available

10.5 Incompatible materials

- Oxidizing agents

10.6 Hazardous decomposition products**Hazardous decomposition products**

- On thermal decomposition (pyrolysis) releases:
- highly toxic gases.
- Gaseous hydrogen fluoride (HF).
- Nitrogen oxides (NO_x)
- Sulphur oxides

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity****Acute oral toxicity**

Tributylmethyammonium LD50 : 300 - 2,000 mg/kg - Rat , female
bis(trifluoromethanesulfonyl)imide Method: OECD Test Guideline 423
This product is classified as acute toxicity, category 4
Unpublished internal reports

Acute inhalation toxicity

No data available

Acute dermal toxicity

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Tributylmethylammonium
bis(trifluoromethanesulfonyl)imide

LD50 : > 2,000 mg/kg - Rat
The product has a low acute toxicity
Unpublished reports

Acute toxicity (other routes of administration) No data available

Skin corrosion/irritation

Tributylmethylammonium
bis(trifluoromethanesulfonyl)imide

Method: EPISKIN Human Skin Model Test
human keratinocytes
No skin irritation
Method: OECD Test Guideline 439
Unpublished internal reports

Serious eye damage/eye irritation

Tributylmethylammonium
bis(trifluoromethanesulfonyl)imide

slight irritation

Respiratory or skin sensitisation

Tributylmethylammonium
bis(trifluoromethanesulfonyl)imide

By analogy

Not classified as sensitising by skin contact according to GHS criteria
Method: OECD Test Guideline 406
Unpublished internal reports

Mutagenicity

Genotoxicity in vitro No data available

Genotoxicity in vivo No data available

Carcinogenicity

No data available

Toxicity for reproduction and development

Toxicity to reproduction/Fertility

Tributylmethylammonium
bis(trifluoromethanesulfonyl)imide

One-Generation Reproduction Toxicity Study - Rat, female
oral
General Toxicity - Parent NOAEL: 7 mg/kg bw/day
Fertility NOAEL: 70 mg/kg bw/day
OECD Test Guideline 421
Unpublished reports

One-Generation Reproduction Toxicity Study - Rat, male
oral
General Toxicity - Parent NOAEL: 2 mg/kg bw/day
Fertility NOAEL: 70 mg/kg bw/day
OECD Test Guideline 421
Unpublished reports

Developmental Toxicity/Teratogenicity

Tributylmethylammonium
bis(trifluoromethanesulfonyl)imide

reproductive and developmental toxicity study - Rat, male and female, Oral
Developmental Toxicity NOAEL: 25 mg/kg bw/day
Method: OECD Test Guideline 421
Unpublished reports

STOT**STOT - single exposure STOT
- repeated exposure**

No data available

Tributylmethylammonium
bis(trifluoromethanesulfonyl)imide

Exposure routes: Ingestion
Target Organs: Endocrine system
Unpublished reports

Oral 90-day - Rat , male NOAEL: 2 mg/kg Target Organs: Endocrine system
Method: OECD Test Guideline 408 Changes in thyroid hormone levels.
Unpublished reports

Oral 90-day - Rat , female NOAEL: 7 mg/kg Target Organs: Endocrine
system Method: OECD Test Guideline 408 Changes in thyroid hormone
levels. Unpublished reports

Experience with human exposure

No data available

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SECTION 12: Ecological information

12.1 Toxicity

Aquatic Compartment

Acute toxicity to fish

Tributylmethylammonium	LC50 - 96 h : > 100 mg/l - Brachydanio rerio (zebrafish)
bis(trifluoromethanesulfonyl)imide	Not harmful to fish (LC/LL50 > 100 mg/L)
	Unpublished reports

Acute toxicity to daphnia and other aquatic invertebrates

Tributylmethylammonium	EC50 - 48 h : 38 mg/l - Daphnia magna (Water flea)
bis(trifluoromethanesulfonyl)imide	Harmful to aquatic invertebrates.
	Unpublished reports

Toxicity to aquatic plants

Tributylmethylammonium	ErC50 - 72 h : > 100 mg/l - green algae
bis(trifluoromethanesulfonyl)imide	End point: Growth rate
	Not harmful to algae (EC/EL50 > 100 mg/L)
	Unpublished reports
	NOErC - 72 h : 46 mg/l - green algae
	End point: Growth rate
	No adverse chronic effect observed up to and including the threshold of 1 mg/L.
	Unpublished reports

Toxicity to microorganisms

No data available

Chronic toxicity to fish

No data available

Chronic toxicity to daphnia and other aquatic invertebrates

No data available

12.2 Persistence and degradability

Abiotic degradation

No data available

Physical- and photo-chemical elimination

No data available

Biodegradation

Ready biodegradability study: Method: OECD Test Guideline 301D 0 - 6 % - 28 d
The substance does not fulfill the criteria for ready biodegradability and ultimate aerobic biodegradability Theoretical oxygen demand Unpublished reports

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water	No data available
Bioconcentration factor (BCF)	No data available

12.4 Mobility in soil

Adsorption potential (Koc)	No data available
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Known distribution to environmental compartments No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Other adverse effects

Ecotoxicity assessment Short-term (acute) aquatic hazard

Tributylmethylammonium Harmful to aquatic life.

bis(trifluoromethanesulfonyl)imide

Long-term (chronic) aquatic hazard

Tributylmethylammonium Harmful to aquatic life with long lasting effects

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal

Prohibition

- Do not empty into drains.
- Land-fill is forbidden.
- Should not be released into the environment.
- Dispose of in accordance with local regulations.

Advice on cleaning and disposal of packaging

- Dispose of in accordance with local regulations.

Measure for waste avoidance or recovery

Do NOT dispose of the packaging without first carrying out the necessary neutralization.

SECTION 14: Transport information

CN DG not regulated

IMDG not regulated

IATA not regulated

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transport regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information

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

Following last version of regulations are applicable for the chemical classification, SDS and label:

- General Rule for classification and hazard communication of chemicals, GB 13690
- Series standards of Safety rules for classification, precautionary labeling and precautionary statements of chemicals, GB 30000.2~GB 30000.29
- General rules for preparation of precautionary label for chemicals, GB 15258
- Safety data sheet for chemical products—Content and order of sections, GB/T 16483
- Decree No. 591 of the State Council of the People's Republic of China: Regulations on the Control over Safety of Hazardous Chemicals
- List of dangerous goods GB12268
- Classification and code of dangerous goods GB6944

Notification status

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Inventory Information	Status
United States TSCA Inventory	- Substance(s) not listed on TSCA inventory
Canadian Domestic Substances List (DSL)	- One or more components not listed on inventory
Australia Inventory of Chemical Substances (AICS)	- One or more components not listed on inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- One or more components not listed on inventory
Korea. Korean Existing Chemicals Inventory (KECI)	- Listed on Inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	- One or more components not listed on inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	- One or more components not listed on inventory
Taiwan Chemical Substance Inventory (TCSI)	- Listed on Inventory
New Zealand. Inventory of Chemical Substances	- One or more components is not listed on the NZIOC inventory. The HSNO status of the product has not been assessed.

SECTION 16: Other information

Full text of H-Statements

- H302 Harmful if swallowed.
- H313 May be harmful in contact with skin.
- H361 Suspected of damaging fertility or the unborn child.
- H372 Causes damage to organs through prolonged or repeated exposure.
- H402 Harmful to aquatic life.

Key or legend to abbreviations and acronyms used in the safety data sheet -

H412 Harmful to aquatic life with long lasting effects.

- ADR: European Agreement on International Carriage of Dangerous Goods by Road.
- ADN: European Agreement on the International Carriage of Dangerous Goods by Inland Waterways.
- RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
- IATA: International Air Transport Association.
- ICAO-TI: Technical Instructions for Safe Transport of Dangerous Goods by Air.
- IMDG: International Maritime Dangerous Goods.
- TWA: Time weighted average
- ATE: Estimated value of acute toxicity - EC: European Community number - CAS: Chemical Abstracts Service.
- LD50: Substance that causes 50% (half) death in the test animals group (Median Fatal Dose).
- LC50: Substance concentration causing 50% (half) death in the test animals group.
- EC50: Effective Concentration of the substance causing the maximum of 50%.

- PBT: Persistent, Bioaccumulative and Toxic substance.
- vPvB: Very Persistent and Very Bioaccumulative.
- GHS/CLP/SEA: Classification, labeling, packaging regulation
- DNEL: Derived No Effect Level
- PNEC: Predicted No Effect Concentration
- STOT: Specific Target Organ Toxicity

Not all acronyms listed above are referenced in this SDS.

Further information

- Distribute new edition to clients
- Update
- See section 1

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. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in any other manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.

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MR Tek Ltd