



Technical specification for chemical safety

MSDS

triisobutylaluminium

Company name: Beijing Dilong Chemical Co., LTD

Address: No.37, Yanshan Dongliu Water Industrial Zone,
Fangshan District, Beijing

Tel.: 010-81334118

Fax: 010-69344298

Postal code: 102502

Email: jason@bjdilong.com

Enterprise emergency telephone number: 010-69344217

Technical specification for chemical safety

Product name: three isobutyl aluminum	SDS number: 1921
Modified date: 2022 /2/25	Version: 1.0.1

Part I: Chemicals and Enterprise Identification

Address: No.37, Yanshan Dongliu Industrial Zone, Fangshan District, Beijing

Chemical English name: triisobutyl aluminium Postcode: 102502

Chemical alias: -Fax: 010-69344298

CAS No. : 100-99-2 Tel: 010-69344217

EC No. : 202-906-3 Email address: jason@bjdilong.com

Molecular formula: C₁₂H₂₇Al Enterprise emergency telephone number: 010-69344217 Recommended use: for organic synthesis and polymer olefin catalyst

Product restricted use: Please consult the manufacturer

Company name: Beijing Dilong Chemical Co., LTD

Part II Risk Overview

| Emergency Situation Overview

liquid. It is easy to burn by itself in the air, and there is a risk of causing a fire. It reacts violently with the water to create a highly flammable gas. It is irritating to the skin. There is a danger of serious eye damage.

| GHS Hazard Category

According to the GB 30000-2013 Chemical Classification and Label Specification series standards (see Part 16), the product is classified as follows: spontaneous combustion liquid, category 1; substances and mixtures releasing flammable gas in water, category 1; skin corrosion / irritation, category 2; eye damage / eye irritation, category 1.

| Tag elements figurative graph



Warning words: danger

Hazard information: exposure to the air will be spontaneous combustion, encounter water to emit spontaneous combustion of flammable gas, causing skin irritation, causing serious eye damage.

Prevention instructions

Prevention: Stay away from heat sources, thermal surfaces, sparks, open fires, and other ignition sources. No smoking. No contact with the air. Do not have any contact with the water. Dampproof. Keep the container closed. Clean it thoroughly after the operation. Wear protective gloves / wear protective clothing / wear protective eye mask / wear protective mask.

Accident response: call the poisoning emergency center / doctor immediately. If skin contamination: dip in cold water or with a wet bandage. In case of skin irritation: seek medical treatment / treatment, take off the contaminated clothes and clean them before reuse. If entering the eyes: carefully rinse with water for more than 5 minutes.

Storage and transportation must be packed with inert gas or specific containers. Store in a cool, ventilated warehouse. Stay away from fire and heat sources. Prevent direct sunlight. The Library temperature does not exceed 35C, and the relative humidity does not exceed 75%. The packaging shall be sealed and shall not be in contact with the air. Should be stored separately with oxidants, acids, alcohols, etc., avoid mixed storage. Explosion-proof-type lighting and ventilation facilities are adopted. Prothe use of mechanical equipment and tools prone to sparks. The storage area shall be equipped with leakage emergency treatment equipment and suitable shelter materials.

Disposal: Disposal of internal loads / containers as per local / regional / national / international regulations.

| Hazard description

Physical chemical danger

Even if the number is small, it can spontaneously ignite within five minutes of contact with the air. Will react violently with water, produce flammable gas that can spontaneous combustion.

health hazard

Inhalation of the substance can cause harmful health effects or respiratory discomfort. Accidental feeding of this product may be harmful to individual health. Direct skin contact can cause skin irritation. Entering the blood through cuts, abrasions, or lesions may produce the harmful effects of systemic injury. Direct eye contact with this product can cause severe chemical burns. Direct eye contact with the product can cause temporary discomfort.

environment hazards

See the SDS Part XII.

Flaming danger

Flammable and spontaneous combustion items

Part III: Composition / Composition Information

Material mixture

Dangerous components	Concentration or concentration range	CAS No.
triisobutylaluminium	^97%	100-99-2
hexane	<3%	110-54-3

Part four, First aid measures

| First aid measures description

General advice: First aid is usually required. show this SDS to the doctor arriving at the site.

Skin contact: Remove the contaminated clothing immediately. Wash the skin with plenty of soapy water and clean water. Seek medical advice if you feel unwell.

Eye contact: rinse thoroughly with a lot of water for at least 15 minutes. Seek medical advice if you feel unwell.

Inhalation: Move the patient to fresh air immediately to keep breathing clear. If breathing is difficult, give it to take oxygen. If the patient eats or inhalthe material, mouth-to-mouth

artificial respiration shall not be performed. If the breathing stops. CPR was performed immediately. Go to a doctor immediately.

Eating: prohibit vomiting, do not feed unconscious people from the mouth of anything. Call your doctor or the poisoning control center immediately.

Advice to protect the rescuers: the leaking substances may react with water pollution, producing gas and increasing the pressure in a closed container. Only house leaks in exhaust containers, and they must be discarded as soon as possible. Remove all fire sources and enhance ventilation. Avoid contact with the skin and the eyes. Avoid inhaling the vapor. Use of protective equipment, including breathing masks.

Special tips for the doctor: targeted treatment according to the symptoms that appear. Note that the symptoms may be delayed.

Part 5, Fire protection measures

| Hazardous characteristics

Can form an explosive mixture with the air. Flambustible, pay attention to the risk of dust explosion. Substances may spontaneously ignite in contact with air. The flame may return when it is extinguished. Note the risk of spontaneous combustion. Water contact may cause strong or explosive reactions. Substances are in contact with air, and moisture or water may burn. Use may produce a flammable or explosive vapor-air mixture. When heating, the container may explode. A essels exposed to fire may leak contents through a pressure relief valve. Heat or contact with the flame may produce expansion or explosive decomposition.

| Fire extinguishing method and fire extinguishing agent

Suitable fire extinguishing medium: dry powder, dry sand or lime.

Inappropriate fire extinguishing medium: water, carbon dioxide, and foam.

| Notes and measures for fire fighting

Wear a breathing mask ((MSHA / NIOSH or equivalent) and full body protective clothing. Fighting the fire at a safe distance, with adequate protection. Prevent fire-fighting water pollution from the surface and groundwater systems.

Part VI leakage emergency treatment

| Protective measures, protective equipment and emergency handling procedures for operators

Ensure adequate ventilation. Clear all of the ignition sources. Quickly evacuate people to a safe area, away from the leakage area and in the upper hand. Use of personal protective equipment. Avoid inhaling vapor, smoke, gas, or air dust.

| Environmental protection measures

Take measures to prevent further leaks or spillages while ensuring safety. Avoid discharging emissions into the surrounding environment.

| Receiving, removal methods and disposal materials of leaking chemicals

When a small amount of leakage, dry sand or inert adsorption material can be used to absorb the leakage, when a large amount of leakage needs to build embankment control. Atttures or collections shall be stored in suitable airtight containers and discarded in accordance with relevant local laws and regulations. Remove all ignition sources and use fireproof flower tools and riot equipment.

Part VII. Operation, Disposal and Storage

| Operational considerations

Please operate in a dry, inert gas atmosphere against moisture. Avoid contact with moisture and water. All metal parts on the equipment are grounded to prevent the vapor ignition. Use of explosion-proof equipment. Operating in well-ventilated places. Wear proper personal protective gear. Avoid making contact with the skin and entering the eyes. Stay away from heat sources, sparks, open fires, and hot surfaces. Take measures to prevent the accumulation of static electricity.

| Storage considerations

Please store it in a dry, inert gas atmosphere. This product is sensitive to moisture and avoid non-moisture and water contact. Keep the container closed. Store in dry, cool, and ventilated areas. Stay away from heat sources, sparks, open fires, and hot surfaces. Stored far away from incompatible materials and food containers.

Part 8: Contact Control / Personal Protection

| controlling parameter

Occupational contact limits

non-avaible

Biological limits

non-avaible

Monitoring method

EN 14042 Workplace Air Guidelines for procedures used to assess exposure to chemical or biological reagents. GBZ / T 160. 1~GBZ / T 160.81-2004 workplace air toxicity determination (series standard).

| engineering control

Maintain adequate ventilation, especially in the enclosed area. Ensure eye washing and shower facilities near the workplace. Use explosion-proof electrical appliances, ventilation, lighting and other equipment. Set up emergency evacuation channels and necessary evacuation areas.

| Respiratory system protection

If the vapor concentration exceeds the occupational exposure limits, or if irritation occurs, use a full-mask multifunctional gas mask (US) or a Type AXBEK (EN 14387) gas mask cylinder.

| eye protection

Wear chemical goggles (meet EU EN 166 or US NIOSH standards).

| Skin and body protection

Wear flame retardant antistatic protective clothing and antistatic protective boots.

| Hand protection

Wear chemical protective gloves (e. g., butyl rubber gloves). Recommend selecting protective gloves tested by EU EN 374, US US F739 or AS / NZS 2161.1 standards.

| Other protection

Smoking, eating and drinking are prohibited at the work sites. Work done, shower dressing. Maintain good hygiene habits.

Part 9, physical and chemical properties

Appearance and traits: a colorless liquid	
PH value (indicated concentration): no data	Odor: no information
Boiling point, initial boiling point, and boiling range (C): 86	Melting point / setting point (C) : 0. 0
Relative density of vapor (air =1):> 1	Odor threshold: no information
Saturated vapor pressure (kPa): no data is available	Relative density (water =1) : 0. 786
Evaporation rate: no data is available	Viscosity (mm ² /s): no data is available
Flash point (C) : -18	n-Octanol / water distribution coefficient: no data
Decomposition temperature (C): no data is available	Ignition temperature (C): 20~25
Upper limit / lower limit [% (V / V)]: upper limit: no data; lower limit: no data	
Dissolubility: no data	Flammability: not applicable

Part X: Stability and Reactivity

| stability

Is stable under the correct usage and storage conditions.

| Incompatible substances

non-avaible

| Conditions that should be avoided

Incompatible substances, heat, flames, and sparks.

| Dangerous reaction

non-avaible

| cleavage product

Under normal storage and use conditions, no dangerous decomposition products will be produced.

Part X, Toxicology Information

| No data were available on acute toxicity | carcinogenicity

ID	CAS No.	Component name	IARC	NTP
1	100-99-2	triisobutylalu minium	nient comprise	nient comprise

| Skin is irritating or corrosive

Cause skin irritation

| Eye irritation or corrosion

Severe eye damage was caused

| sensitization of skin

non-avaible

| **Respiratory sensitization**

non-avaible

| **Germ cell mutability**

non-avaible

| **genotoxicity**

non-avaible

| **Specific target organ system toxicity- -One contact is possible**

non-avaible

| **Specific target organ system toxicity - repeated contact**

non-avaible

| **inhalation hazard**

non-avaible

Part XII, Ecological Information

| **Acute aquatic toxicity**

non-avaible.

| **Chronic aquatic toxicity**

non-avaible

| **Persistence and degradability**

non-avaible

| **Potential biocumulativity**

non-avaible

| **Mobility in the soil**

non-avaible

| **Other harmful effects**

non-avaible.

Part 13: Waste Disposal

| **Waste disposal method**

Product: If required, carry product containers or labels conveniently.

Unclean packaging: the residues may remain after emptying the packaging, which should be kept away from heat and fire sources, and may be returned to the manufacturer for recycling if possible.

| **Waste considerations**

See the Waste Disposal " section.

Part 14: Transportation Information

| **United Nations Dangerous Goods Number (UN): 3394**

| United Nations transport name: Liquid organometallic substances, fire, water reaction

| **UN Risk Classification: 4.2 + 4.3**

| **Packaging category: I**

| **Packaging label**



| Marine Pollutants (Yes / No): No | packing method

Open steel barrel. Threaded mouth glass bottles, iron lid pressure mouth glass bottles, plastic bottles or metal bucket (tank) outside the ordinary wooden box, etc. Threaded mouth glass bottles, iron lid pressure mouth glass bottles, plastic bottles or metal bucket (tank) outside the ordinary wooden box, etc. Package as recommended by the manufacturer.

| Transportation considerations

Transportation should be exposed, rain, prevent high temperature. Transportation should be exposed, rain, prevent high temperature. The exhaust pipe of the vehicle carrying this product must be fire resistant. The exhaust pipe of the vehicle carrying this product must be fire resistant. Transport vehicles and ships must be dry, and have good rain prevention facilities. Transport vehicles and ships must be dry, and have good rain prevention facilities. It is strictly prohibited to mix and transport without oxidizers, acids, food and food additives. It is strictly prohibited to mix and transport without oxidizers, acids, food and food additives. Transport vehicles shall be equipped with corresponding varieties and quantity of fire fighting equipment and leakage emergency treatment equipment. Check container shall be complete and sealed before transportation. Hazard signs and announcements shall be posted on the means of transport according to the relevant transport requirements.

Part 15: Regulation Information

| China Chemicals Management List

component	A	B	C	D	E	F	G	H
triisobutyl aluminium	enrol	nient compri se	nient compri se	nient compri se	nient compri se	nient compri se	nient compri se	nient compri se

[A] Catalogue of Hazardous Chemicals (2015 edition), Announcement No.5,2015

[B] Catalogue of Hazardous Chemicals for Key Environmental Management, General Office of the Ministry of Environmental Protection No. 33, 2014

[C] Catalogue of Toxic Chemicals that China Strictly Restricting Import and Export, Announcement of Ministry of Environmental Protection No.85,2013

[D] List of Narcotic Drugs and Psychotropic Drugs (2013 edition), Food and Drug Administration Notice No.230,2013

[E] The List of Key Regulatory Hazardous Chemicals (Batch 1 and Batch 2), Ssafe Notice No. 95,2011 and Notice No. 12, 2013

[F] "China's Import and Export of Controlled Ozone-layer-depleting Substances List (Batch 1 to Batch 6)", the Ministry of Environmental Protection from 2000 to 2012 series of announcements

[G] The List of Easy and Explosive Hazardous Chemicals (2011 edition), announced by the Ministry of Public Security on November 25,2011

[H] Catalogue of highly toxic substances, Ministry of Health Notice No.142,2003

Part XVI: Other Information

Latest revision date: 2022 /02/25

| Modify the instructions

This SDS is revised in accordance with the Contents and Order of Items (GB / T16483-2008), the Guide for the Preparation of Chemical Safety Technical Instructions (GB / T 17519-2013) and the Safety Technology Book of Dangerous Chemicals (2008 edition). Among them, the GHS classification results of chemicals are obtained according to the Implementation Guide of Hazardous Chemicals Catalogue (2015 edition) (Trial) and the Code for Classification and Labeling of Chemicals (GB 30000. 2-2013 ~ GB 30000.29-2013) series standards.

| reference documentation

[1] [International Chemical Safety Programme: International Chemical Safety Card \(ICSCs\) at http: // www.ilo.org/dyn/icsc/showcard.homeo](http://www.ilo.org/dyn/icsc/showcard.homeo)

[2] [International Agency for Research on Cancer at http: // www.iarc.fr/o](http://www.iarc.fr/o)

[3] OECD Global Chemicals Information Platform at:
http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

[4] [The US CAMEO Chemical Materials Database at http: // cameochemicals.noaa.gov/search/simpleo](http://cameochemicals.noaa.gov/search/simpleo)

[5] [American Library of Medicine: Chemical Identification Database at http: // chem.sis.nlm.nih.gov/chemidplus/chemidlite.jspo](http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jspo)

[6] [The US Environmental Protection Agency: The Integrated Risk Information System, located at http: // cfpub.epa.gov/iris/o](http://cfpub.epa.gov/iris/o)

[7] [U. S. Department of Transportation: Emergency Response Guide at http: // www.phmsa.dot.gov/hazmat/library/ergo](http://www.phmsa.dot.gov/hazmat/library/ergo)

[8] [German GESTIS-Hazardous Substances database at http: // gestis-en.itrust.de/o](http://gestis-en.itrust.de/o)

| Abbreviations description

CAS Chemical Digest Number TSCA American TSCA List of Chemicals
Time-weighted average of PC-TWA for short contact allowable concentrations of PC-STEL DNEL-derived no-impact levels, IARC International Agency for Research on Cancer No-effect concentration predicted by the PNEC for the RPE respiratory protection devices LC5050% lethal concentration LD5050% lethal dose
NOEC has no observed effect concentration, and EC5050% effective concentration
PBT persistence, biocumulation, and toxic POW octanol / water distribution coefficient BCF bioconcentration factor (BCF) vPvB persistence, biocumulation
CMR for the carcinogenic, teratogenic, and reproductive-toxic chemicals IMDG IMO ICAO / IATA ICAO / International Air Transport Association UN United Nations ACGIH American Industrial Hygiene Conference NFPA American Fire Association OECD Economic Cooperation No