

Material Safety Data Sheet of Triethyl aluminum (MSDS)

Part 1: Chemical and Enterprise mark

Product name: TEAL

English name: Triethyl Aluminum

MSDS code: TEAL

Production date: October 1st, 2010

Part 2: Composition Information

Pure ☐

Mixture ☒

Product name: TEAL

Harmful ingredient	Concentration	CAS No.
Al(C ₂ H ₅) ₃	≥96%	97-93-8

Part 3: Fatalness Introduction

Risk classification: type 4.2 no water, spontaneous

Ways to invade: eyes, skin, respiratory system

Health hazard: triethyl aluminum has strong stimulation and corrosion burns impact to body

Influence on eyes: be heavily burnt when it invades eyes, especially conjunctival.

Influence on skin: be heavily burnt and a fierce pain will be felt through skin

Influence on respiratory system: inhale burnt gases will cause metallothermic, high concentration will result in pulmonary

edema, smoke inhalation will also result in smoke inflammation.

Environmental hazard: it will react with water once leakage occurs and it is harmful to aquatic organisms.

Explosion hazard: it will blaze up rapidly on contact with air; explosive reaction occurs when it meets water and then leads to explosive burning.

Part 4: First-aid Measures

Skin Contact: cast off contaminated clothes or shoes immediately, rinse your skin thoroughly at

least 15 minutes and see the
doctor if necessary

Eyes Contact: open eyelid, give it a rinse at least 15 minutes with flowing clear water or saline. If
the lenses doesn't adhesive,
please clear and wash it.

Inhalation: let victims out of the scene to where the air is fresh, envelop him in blankets to keep
him warm and be quiet, ensure
the respiratory is unobstructed, perform oxygen transfer or artificial respiration when he have
difficulty in breathing and take
him to the hospital immediately.

Eat: emetics rinse her mouth with large quantity of water, envelop her in blankets to make her
warm and quiet, go to the
hospital as soon as possible.

Part 5: Fire Control Measures

Hazard properties: no water, spontaneous. It will blaze up rapidly on contact with air, explosive
reaction occurs when it meets

water and then leads to explosive burning. It will decompose when encounters high fever(above
120°C) and the pressure in the
container will go high which leads to exists the danger of crack and explosion.

Harmful combustion: carbon monoxide、alumina smog

Extinguishing method and extinguishant: dry chemical、vermiculite and dry sand

Extinguishing method: shut off the combustion source as soon as possible, use dry sand to avoid
spreading and use dry

chemical or vermiculite to cover the surface to keep out the air; With this method, the fire can be
brought under control but it

will burn on contact with air, we must use extinguishant to put out the flame when the fire is under
control.

Cautions: Firemen must wear protections such as fire-resisting clothes, antivirous mask, protective
spectacles and leather

gloves to keep from inhaling the smoke produced by the burning of triethyl aluminum; placed out
of bounds to unauthorized

access near the spot, keep these combustibles away from the fire, especially left water.

Part 6: Emergency Response to Leakage

Emergency response: measures to protect human beings, keep the combustibles away from the fire,
especially water which

could cause explosion. Evacuate people in danger to the safety and isolate him, handle him with
protective cloth and mask.

Measures to protect environment: control the leaked triethyl aluminum to burn to safety, collect
remainders、absorbents

and extinguishants to waste disposal facility.

Treatment methods: shut off the combustion source as soon as possible, if the fire can be under control, let it burn gradually,
but vermiculite must be used to avoid spreading to cover the surface and the dry sand must be used to keep out the air if the
fire is fierce, further processing is needed when necessary.

Part 7: Operation and Storage

Operation attention: It is in nitrogen atmosphere and airtight operation. Operator must be specially trained and strictly
observe operation rules. Wearing protective masks, clothes and leathery gloves is suggested to operators. Keep far
away from heat source, prohibit smoking absolutely at working site and use blast-proof ventilation equipment. Containers
should be loaded by forklift or crane gently, to prevent damage of the containers. Equip certain number of powder fire
extinguishers in workplace.

Part 8: Contact Control/ Physical Protection

Maximum allowable concentration (MAC): 2mg/m (measured by AL)

Monitoring Method: no data

Engineering control: use airtight and nitrogen-protected conveying system to keep away contacting with air and water. Set
up gas sensors, combustible gas annunciator and gas exchange facility inside. Set facilities used to wash eyes and body
near workplace.

Respiratory system protection: wear mask scuba gear or oxygen scuba gear to avoid breathing dust when the fire broke out.

Eye protection: wear chemical goggles, transparent mask and protective mask to protect eyes.

Body protection: wear fire-resisting uniform in normal operating and fire-fighting uniform in trouble processing.

Hand protection: wear leather gloves in normal operating and aluminum foil asbestos gloves in trouble processing.

Part 9: Physical-chemical Properties

Exterior and Properties: Colorless and transparent liquid

Viscosity: 2.58mpa S (25 °C)

Melting point: -52.5 °C

Boiling point (°C): 186 °C/101.3Kpa

Relative density (Water is 1): 0.835

Relative steam density (The air is 1): 3.9

Saturated vapor pressure: 3.3Pa (25 °C)

Heat of combustion: 4833.6KJ/mol (25 °C)

Flash Point: <-52 °C

Ignition temperature: <-52 °C

Upper explosive limit % (V/V): No data

Lower explosion limit % (V/V): No data

Solubility: soluble in solvent like hydrocarbons

Applications: widely used at the process of olefin polymerization and synthetic rubber as a component of catalyst.

Part 10: Stability and Reactivity

The Stability: It's stable and safe to be in the room temperature and airtight inert gas container.

Soluble in alkane, no

combustibility when the density of triethyl aluminum is lower than 15% (Wt/Wt).

Forbidden things: Absolutely avoiding contacting with air, water, active hydrogen compound, halogen or halogen compound, carbon dioxide, etc.

The conditions avoid touching: Explosive reactions may happen when touching with halogen, alkylogen, alcoholic things and carbon dioxide.

Burned decomposition products: $\text{Al}_2\text{O}_3 + \text{CO}_2 + \text{H}_2\text{O}$

Exploded hydrolytic products: $\text{Al}(\text{OH})_3 + \text{CO}_2 + \text{CO} + \text{C} + \text{Al} + \text{H}$ (Heat buildup Explosion)

Part 11: Toxicology Data

Acute toxicity: None

Sub-acute: None

Allergy: None

Part 12: Ecology Information

Ecotoxicity: It brings harmful effects on aquatic organisms when reacting with water.

Biological Degradability: It will not residual in the nature when divulges the spontaneous combustion.

Non-biology Degradability: It will not residual in the nature when divulges the spontaneous combustion.

Part 13: Waste Disposal

Waste characteristics: Hazardous waste.

Disposal Information: We dispose it in controlling incinerating or hydrolysis, and then burn the filtration separation of solid waste into the incinerator.

Part 14: Transport Information

Dangerous Goods Code: 42022

UN Number: 3394

Packing Group: 1、spontaneous combustion no water, no smoke, no fire, non-contact with air.

Packing method: special steel pressure tank dedicated closed; packaging and storage tanks can be moved (within the already nitrogen); packaging used can be circled.

Transportation Instructions: To prevent rain and from exposing in the sunlight when it's in transportation; Avoid mobile tanks

getting shock; Avert damage and turnover; Drive in the prescriptive route when transporting.

Part 15: Regulation Information

According to the "Chemical Safety Management of Dangerous Goods Regulations" issued by State Council and published on

January 26, 2002, for the safe production, storage and use, business, transportation, registration and emergency rescue,

legal responsibilities of hazardous chemicals are legally formulated. "The classification of dangerous chemicals used and the mark" (GB13690-92), classifies it (TEAL) as a spontaneous liquid in class 4.2.

Part 16: Other Information

Date of form filling: October 18, 2010