Chemical Safety Data Sheet

SECTION 1 IDENTIFICATION

GHS Product identifier: Diethylaluminum chloride.

Other means of identification: /

Recommended use of the chemical and restrictions on use:

Co-catalyst for olefin polymerization.

For industrial use only, not for food, animal feed and food, animal feed additives.

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

Pyrophoric Liquid Category 1, Substances and Mixtures Which, in contact with Water, Emit Flammable Gases Category 1, Skin Corrosion / Irritation Category 1A, Severe Eye Damage / Eye Irritation Category 1.

GHS Label elements, including precautionary statements

Signal word: Danger

Hazard statement(s): Catches fire spontaneously if exposed to air. In contact with water releases flammable gases, which may ignite spontaneously. Causes severe skin burns and eye damage.

Precautionary statement(s):

Prevention:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not allow contact with air. Keep container tightly closed. Wear protective gloves/protective clothing/eye protection/face protection. Do not allow contact with water. Handle and store contents under inert gas Protect from moisture. Do not breathe dusts or mists. Wash thoroughly after handling.

Response:

In case of fire: Use Sand, dry powder, anhydrous sodium carbonate to extinguish. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor... Specific treatment (see below). IF ON SKIN (or hair): Immerse in cool water [wrap in wet bandages]. Brush off loose particles from skin. Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor。

Storage

Store in a dry place. Store in a closed container. Store locked up.

Disposal:

Dispose of contents/container,complaince with local regulations.

Other hazards which do not result in classification: /

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Concentration%
Diethylaluminum chloride	96-10-6	100

SECTION 4 FIRST AID MEASURES

Description of necessary first aid measures

If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact: Wash off with soap and plenty of water. Consult a physician.

In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed: Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed: /

Indication of immediate medical attention and special treatment needed： /

SECTION 5 FIREFIGHTING MEASURES

Suitable extinguishing media: DO NOT USE WATER, CO_2 OR FOAM ON SUBSTANCE ITSELF. For SMALL FIRES: Dry chemical, soda ash or lime. For LARGE FIRES: DRY sand, dry chemical, soda ash; OR withdraw and allow fire to burn itself out.

Special hazards arising from the chemical: May ignite on contact with air, moist air or water. May react vigorously or explosively on contact with water. May decompose explosively when heated or involved in fire. May REIGNITE after fire is extinguished. Gases generated after contact with water or moist air may be poisonous, corrosive or irritating. Gases generated in fire may be poisonous, corrosive or irritating. Containers may explode on heating. Runoff may create multiple fire or explosion hazard.

Special protective actions for fire-fighters: Wear SCBA and fully-encapsulating, gas-tight suits when handling these substances. Always wear thermal protective clothing when handling molten substances. Structural fire fighter's uniform will only provide limited protection. Alert Fire Brigade and tell them location and nature of hazard. May be violently or explosively reactive. Wear full protective clothing plus breathing apparatus. Prevent, by any means available, spillage from entering drains or water course. Consider evacuation (or protect in place). DO NOT use water on fires. CAUTION: If only water available, use flooding quantities of water or withdraw personnel. DO NOT allow water to enter containers. DO NOT approach containers suspected to be hot. Cool fire exposed containers with flooding quantities of water from a protected location until well after fire is out. If safe to do so, remove undamaged containers from path of fire. If fire gets out of control withdraw personnel and warn against entry.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Eliminate all ignition sources. Cover with DRY earth, sand or other non-combustible material. Then cover with plastic sheet to minimise spreading and to prevent exposure to rain or other sources of water.

Environmental precautions: Stop leak if safe to do so; prevent entry into waterways, drains or confined spaces.

Methods and materials for containment and cleaning up: DO NOT walk through spilled material. Wear full protective clothing plus breathing apparatus. DO NOT touch damaged containers or spilled material unless wearing appropriate protective clothing. Water spray may be used to knock down vapours or divert vapour clouds; DO NOT allow water to enter container or come into contact with the material. Cover with DRY earth, sand, vermiculite or other non-combustible material. Then cover with plastic sheet to minimise spreading and to prevent exposure to rain or other sources of water. Use clean, non-sparking tools to collect absorbed material and place into loosely-covered metal or plastic containers ready for disposal. Alternately, the spill may be contained using DRY earth, sand, or vermiculite and then covered with a high boiling point mineral oil. Recover the liquid using non-sparking appliances and place in labelled, sealable container. Wash spill area with detergent and water and dike for later disposal. After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling: Avoid all personal contact, including inhalation. Wear protective clothing when risk of overexposure occurs. Use in a well-ventilated area. Avoid contact with moisture. Avoid smoking, naked lights or ignition sources. Avoid contact with incompatible materials. When handling, DO NOT eat, drink or smoke. Keep containers securely sealed when not in use. Avoid physical damage to containers. Always wash hands with soap and water after handling. Work clothes should be laundered separately and before re-use. Use good occupational work practice.

Conditions for safe storage, including any incompatibilities: Store in original containers in approved flame-proof area. No smoking, naked lights, heat or ignition sources. DO NOT store in pits, depressions, basements or areas where vapours may be trapped. Keep containers securely sealed. Store away from incompatible materials in a cool, dry well ventilated area. Protect containers against physical damage and check regularly for leaks. Protect containers from exposure to weather and from direct sunlight. Ensure proper stock-control measures are maintained to prevent prolonged storage of dangerous goods. Automatic fire-sprinklers MUST NOT be installed in room or space. The room or space must be located at least five metres from the boundaries of the premises and from other buildings unless separated by a wall with a fire resistance of at least four hours. Observe manufacturer's storage and handling recommendations contained within this MSDS.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters: /

Appropriate engineering controls: Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances.

Personal protective equipment

Eye/face protection: Safety glasses with side shields. Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.

Skin protection: Wear chemical protective gloves, eg. PVC. Wear safety footwear or safety gumboots, eg. Rubber.

Respiratory protection: Type BAX-P Filter of sufficient capacity.

Thermal hazards: /

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colorless liquid
Odour	/

Odour Threshold	/
pH	/
Melting point/freezing point	-78℃
Initial boiling point and boiling range	127℃（50mmHg）
Flash point	/
Evaporation rate	HIGHLY FLAMMABLE
Flammability (solid, gas)	/
Upper/lower flammability or explosive limits	/
Vapour pressure (kPa)	/
Vapour density (Air = 1)	>1
Relative density (Water = 1)	0.962（25℃）
Water solubility	Reacts Violently
Partition coefficient: noctanol/water	/
Autoignition temperature	/
Decomposition temperature	/
Viscosity	/

SECTION 10 STABILITY AND REACTIVITY

Reactivity: /

Chemical stability: The aluminium alkyl halides comprise a reactive group of compounds (with reactivities similar to those of the trialkylaluminiums); increase in size of the alkyl group and the degree of halogen substitution tends to reduce the pyrophoric nature of the material.

Possibility of hazardous reactions: Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous. Segregate from alcohol, water. Avoid reaction with oxidising agents.

Conditions to avoid: Heat, flames and sparks.

Incompatible materials: Oxidizing agents. Flammable and combustible materials. Water.

Hazardous decomposition products: carbon dioxide (CO_2), hydrogen chloride, phosgene, metal oxides, other pyrolysis products typical of burning organic material.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on the likely routes of exposure: Inhaled, Ingestion, skin, eyes.

Symptoms related to the physical, chemical and toxicological characteristics: /

Acute health effects

Pyrophoric compounds may decompose giving rise to potent irritants of the respiratory tract. Pyrophoric compounds may produce gastrointestinal damage resulting from local generation of heat. Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. When the material is applied to the eye(s), it produces severe ocular lesions after instillation.

Chronic health effects: It has been suggested that aluminium is implicated in the aetiology of Alzheimer's disease and associated with other neurodegenerative diseases in humans.

Numerical measures of toxicity (such as acute toxicity estimates):/

SECTION 12 ECOLOGICAL INFORMATION

Toxicity: /
Persistence and degradability: /
Bioaccumulative potential: /
Mobility in soil: /
Other adverse effects: /

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal methods: For small quantities: Cautiously add the material to dry butanol in an appropriate solvent. Reaction may be vigorous and exothermic. Large volumes of flammable hydrogen may be generated and venting procedures should be conducted in a flame-proof environment. Neutralise the solution with aqueous acid, filter and burn the liquid portion in an approved incinerator. Recycle wherever possible or consult manufacturer for recycling options. Consult State Land Waste Authority for disposal. Bury or incinerate residue at an approved site. Recycle containers if possible, or dispose of in an authorised landfill.

SECTION 14 TRANSPORT INFORMATION

UN number: 3394.
UN proper shipping name: ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE（Diethylaluminum chloride）.
Transport hazard class(es): 4.2+4.3.
Packaging group: I.
Environmental hazards: /
Special precautions for user: /

SECTION 15 REGULATORY INFORMATION

Regulations：This safety data sheet is in compliance with the following national standards: GB/T 16483-2008, GB 13690-2009, GB/T 15098-2008, GB 18218-2018, GB 15258-2009, GB 6944-2012, GB 190-2009, GB/T 191-2008, GB 12268-2012, GBZ 2-2007 as well as the following national regulations: Dangerous Goods Transport Administrative Regulation [Published by the Ministry of Railways, 2008], Dangerous Chemicals Safety Administrative Regulation [Published by the State Council, 2011].

SECTION 16 OTHER INFORMATION

References	“Model Regulations on the Transport of Dangerous Goods” “The Globally Harmonized System of Classification and Labelling of Chemicals”
Form Date	8-May-2019