

Safety data sheet



According to Regulation (EC) No. 1907/2006

DEZ

1. IDENTIFICATION OF THE SUBSTANCE OR PREPARATION AND THE COMPANY/UNDERTAKING

Product Identifier Diethylzinc, neat	
Supplier Akzo Nobel Polymer Chemicals B.V. Stationsstraat 77 PO Box 247 NL-3800 AE Amersfoort The Netherlands T +31 334676767 www.akzonobel.com/polymer	
E-mail address of person responsible for safety data sheet RegulatoryPC@akzonobel.com	
Emergency telephone AkzoNobel Chemicals-Deventer-NL T +31 570 679211 F +31 570 679801	
Relevant identified uses of the substance or mixture organic synthesis	
Date of last issue / Revision number 2011/03/21 / 3.01	
Chemical family Metal alkyl	
REACH Registration number 01-2119474681-33	

2. HAZARDS IDENTIFICATION

Reacts violently with water. Spontaneously flammable in air. Causes burns. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
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GHS classification	
Description	Applicable
Pyrophoric liquid	category 1
Water contact emits flammable gases	category 1
Eye irritation	category 1
Skin corrosion/ irritation	category 1B
Aquatic environment, chronic	category 1
Aquatic environment, acute	category 1

Safety data sheet

According to Regulation (EC) No. 1907/2006

DEZ

Pictogram(s) (GHS)



Signal word/Hazard statement(s) GHS

Code	Description
Signal word: DANGER	
H250.	Catches fire spontaneously if exposed to air.
H260.	In contact with water releases flammable gases which may ignite spontaneously.
H26EUH014.	Reacts violently with water.
H314.	Causes severe skin burns and eye damage.
H410.	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s) (GHS)

Code	Description
The precautionary statements marked with a * are mentioned on the label of the packaging of the product.	
P210.	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P222.	Do not allow contact with air.
P223.	Keep away from any possible contact with water, because of violent reaction and possible flash fire.
P231+P232.	Handle under inert gas. Protect from moisture.
P273. *)	Avoid release to the environment. *)
P280d. *)	Wear protective gloves, eye/face protection and protective clothing. *)
P301+P330+P331.	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+P334.	IF ON SKIN: Immerse in cool water/wrap in wet bandages.
P304+P340.	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338.	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310. *)	Immediately call a POISON CENTER or doctor/physician. *)
P363.	Wash contaminated clothing before reuse.
P378f. *)	Use vermiculite, dry chemical powder or dry sand for extinction. *)
P402+P404.	Store in a dry place. Store in a closed container.
P422b. *)	Store contents under nitrogen. *)
P501a.	Dispose of contents and container according to local regulation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is to be considered as a substance in conformance to EC directives.

Information on hazardous ingredients

Chemical description

Diethylzinc, neat

Safety data sheet



According to Regulation (EC) No. 1907/2006

DEZ

Composition / information on ingredients			
Number	% w/w	CAS-number	Chemical name
1	100	000557-20-0	Diethylzinc

Number	REACH Registration number	EC-number	Classification according to 1272/2008 as amended			Classification according to 67/548/EEC as amended
1	01-21194 74681-33	209-161-3	Pyrophoric liquid	category 1	H250 H260 H314 H410	C F N R14 R17 R34 R50/53
			Water contact emits flammable gases	category 1		
			Eye irritation	category 1		
			Skin corrosion/ irritation	category 1B		
			Aquatic environment, chronic	category 1		
			Aquatic environment, acute	category 1		

Other information

Technical pure substance.

4. FIRST AID MEASURES

Most important symptoms and effects

Causes burns. Causes injury to the cornea and eyelids; Risk of serious damage to eyes. Irritating to respiratory system, may cause delayed pulmonary oedema.

Description of first aid measures

General

Call a physician immediately.

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. Oxygen may additionally be given, by trained personnel, if it is available. Get medical attention immediately.

Skin

While wearing impervious gloves and air-tight safety goggles, immediately start continuous flushing of all affected areas on the victim with water for at least 15 minutes. If victim is wearing air-tight safety goggles, do not remove them. Remove contaminated clothing and shoes. If clothing is stuck to the skin after flushing with water, do not remove it. Get medical attention immediately. Wash or destroy clothing. Thoroughly clean or destroy contaminated shoes.

Eye

Immediately start continuous flushing of eyes with water for at least 15 minutes. If easy to do, contact lenses should be removed during the flushing, by trained personnel. Hold the eyelids apart during the flushing to ensure rinsing the entire surface of the eye and lids with water. Get medical attention immediately.

Ingestion

DO NOT induce vomiting. Get medical attention immediately by calling a physician or a poison control center. If victim is conscious and alert, give a cupful of water. Never give anything by mouth to an unconscious or convulsing person. If vomiting occurs, the patient should lie on their left side while vomiting to reduce the risk of aspiration.

Indication of any immediate medical attention and special treatment needed

Persons with pre-existing skin, eye, or respiratory disease may be at increased risk from the irritant or allergic properties of this material.

Irrigate burn area with large amounts of water to decontaminate, if not already done. Chemical burns on the skin should then be treated like thermal burns. Skin reactions may take 24-48 hours to develop. If eyes are affected, flush eyes with buffered or plain irrigating solutions for at least 15 minutes, if not already done. If any ulceration or conjunctival injury is present, have an ophthalmologist examine the patient. Application of cool water helps relieve pain and swelling of both the skin and eyes. If swallowed, do not induce vomiting. Give patient plenty of water to drink. Ingestion of this corrosive material may cause severe ulceration, inflammation, and possible perforation of the gastrointestinal tract. Maintain adequate airway. Aspiration during induced emesis can result in severe lung injury. Contact a Poison Control Center for additional treatment information. Treat any additional effects symptomatically.

According to Regulation (EC) No. 1907/2006

DEZ

5. FIRE-FIGHTING MEASURES

Extinguishing media vermiculite, dry chemical powder, dry sand.
Unsuitable extinguishing media Never use water !!! See also Section: Other information. foam halones
Hazardous decomposition / combustion products Products of complete combustion are carbon dioxide, water and zinc oxide. Additionally, products of incomplete combustion may include carbon monoxide, elemental carbon and hydrocarbons (alkanes and alkenes).
Protective equipment Firefighters must wear fire resistant protective equipment. Wear approved respirator and protective gloves.
Other information Evacuate personnel to safe areas. In case the tank or cylinder is directly in a fire or exposed to elevated temperatures for prolonged time, the tank or cylinder can burst violently. Consider to let it burn out completely. Waterspray may only be used by experienced fire fighters. Cool adjacent equipment with water from safe distance. After a fire, ventilate thoroughly the area and soak with water, clean the walls and metallic surfaces.
Fire and explosion hazard CAUTION: reignition may occur. Vapours produced by incomplete combustion may form explosive mixtures with air. In case of fire and/or explosion do not breathe fumes.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions Do not breathe fumes/vapour. Avoid contact with skin and eyes. For personal protection see Section 8.
Environmental precautions Do not allow to enter drains or water courses.
Methods and material for containment and cleaning up Isolate spill area. After fire has been extinguished or has been allowed to burn out completely, wait CONSIDERABLE TIME (until smoke is no longer observed). After that, carefully wash spill area with a waterspray. Stop leakage if possible. Eliminate all sources of ignition, and do not generate flames or sparks. Take precautionary measures against static discharges. Allow controlled hydrolysis. Isolate spill area. After fire has been extinguished or has been allowed to burn out completely, wait CONSIDERABLE TIME (until smoke is no longer observed). After that, carefully wash spill area with a waterspray.
Other information Ignition will occur. Evacuate personnel to safe area.

7. HANDLING AND STORAGE

Precautions for safe handling In order to prevent thermal decomposition do not overheat ($T > 70^{\circ}\text{C}$ / 158°F exothermic). Local overheating and resulting thermal decomposition may cause the tank or cylinder to burst violently. When using do not eat, drink or smoke. Handle in well ventilated areas. Eliminate all sources of ignition, and do not generate flames or sparks. Take precautionary measures against static discharges. Apply earthing when transferring from one container to another. Avoid contact with moisture and water. Keep under nitrogen. Handle only in closed system. During sampling, disconnecting lines or opening connections, an aluminised suit should be worn. Avoid contact with skin and eyes. Avoid Incompatible materials (See Section 10).
Fire and explosion prevention Spontaneously flammable in air. Do not cut or weld on or near this container even when empty.
Conditions for safe storage Store in accordance with local/national regulations. Keep away from food, drink and animal feedingstuffs. Keep under dry nitrogen containing less than 10 ppm oxygen. Protect product from moisture and wet air. Keep container tightly closed and in a well-ventilated place.
Other information Wash hands thoroughly after handling or contact. Keep working clothing separately and do not take them home.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Safety data sheet



According to Regulation (EC) No. 1907/2006

DEZ

Control parameters Ensure good ventilation and local exhaustion of the working area.
Personal protection
Respiratory In case of insufficient ventilation wear suitable respiratory equipment (respirator with Filter A/p2).
Hand impervious gloves.
Eye Safety glasses and a full face shield. A face shield is preferred over goggles.
Skin and body aluminised suit and protective boots (For further advice contact manufacturer).
Other information Emergency-shower and facilities for rinsing eyes must be accessible. Launder clothes before reuse.

In this country no exposure limit has been established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance liquid
Colour colourless clear
Boiling point/range 118°C / 244°F
Melting point/freezing point -30°C / -22°F
Flash point not applicable
Flammability Extremely flammable. Contact with water liberates extremely flammable gases.
Explosive properties no
Oxidising properties no
Vapour pressure 2.1 at 20°C / 68°F
Density 1.198 kg/m ³ (30°C / 86°F) Specific gravity = 1.198 (30°C / 86°F)
Bulk density not applicable
Solubility in water Reacts violently with water.
Solubility in other solvents Miscible with saturated aliphatic and aromatic hydrocarbons.
pH value not applicable
Partition coefficient n-octanol/water not applicable
Relative vapour density (air=1) not determined

According to Regulation (EC) No. 1907/2006

DEZ

Viscosity 0.7 mPa.s (30°C / 86°F)
Non-Pyrophoric Limit Non-Pyrophoric Limit : 31 % in Heptane Non-Pyrophoric Limit : 23 % in n-hexane
Autoignition temperature Spontaneously flammable in air.
Upper/lower flammability or explosive limits not applicable
Volatile % not determined

10. STABILITY AND REACTIVITY

Conditions to avoid In order to prevent thermal decomposition do not overheat (T> 70°C / 158°F exothermic). Local overheating and resulting thermal decomposition may cause the tank or cylinder to burst violently.
Chemical stability Stable under recommended storage and handling conditions (see section 7).
Incompatible materials Avoid contact with moisture and water, alcohols, acids, organic halides and oxygen containing compounds.
Possibility of hazardous reactions Polymerization does not occur.
Hazardous decomposition products Products of complete combustion are carbon dioxide, water and zinc oxide. Additionally, products of incomplete combustion may include carbon monoxide, elemental carbon and hydrocarbons (alkanes and alkenes).

11. TOXICOLOGICAL INFORMATION

Diethylzinc
Acute toxicity
Oral LD50 No data available
Irritation
Skin Corrosive
Eye Corrosive; Risk of serious damage to eyes
Respiratory Corrosive

12. ECOLOGICAL INFORMATION

Diethylzinc
Fate
Other information Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The mandatory EU labelling has been followed.

13. DISPOSAL CONSIDERATIONS

Product Refer to manufacturer/supplier for information on recovery/recycling. Waste disposal in accordance with regulations (most probably controlled incineration).
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Safety data sheet



According to Regulation (EC) No. 1907/2006

DEZ

Contaminated packaging According to local regulations. Emptied container might retain product residues. Follow all warnings even after the container is emptied. Do not wash residues into drains or other waterways.
Other information For further advice contact manufacturer.

14. TRANSPORT INFORMATION

<i>Land transport</i>
Transport hazard class 4.2
Classification Code SW
RID class 4.2
Packing group I
Hazard Identification No. X333
Substance Identification No. 3394
UN number 3394
Proper Shipping Name ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE (Diethylzinc)
Tunnel code B/E
Required labels 4.2 + 4.3
Subsidiary risk 4.3

<i>Sea transport (IMO / IMDG-code)</i>
Transport hazard class 4.2
Packing group I
UN number 3394
EMS F-G, S-M
Marine pollutant yes
Proper Shipping Name ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE (Diethylzinc)
Other information Label(s) : 4.2 + 4.3

<i>Air transport (ICAO-TI / IATA-DGR)</i>

Safety data sheet

According to Regulation (EC) No. 1907/2006

DEZ

UN number
Forbidden

15. REGULATORY INFORMATION

Product label name
Diethylzinc, neat

Labelling according to EC directives

EC-number
See section 3

Classification based on
The mandatory EU labelling has been followed.




R(isk) phrase(s) (EU classification)

Code	Description
R14.	Reacts violently with water.
R17.	Spontaneously flammable in air.
R34.	Causes burns.
R50/53.	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S(afety) phrase(s) (EU classification)

Code	Description
S06B.	Keep under nitrogen.
S16.	Keep away from sources of ignition - No smoking.
S24/25.	Avoid contact with skin and eyes.
S36/37/39.	Wear suitable protective clothing, gloves and eye/face protection.
S43B.	In case of fire, use dry chemical powder; never use water.
S45.	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S61.	Avoid release to the environment. Refer to special instructions/Safety data sheets.

Classification according to 67/548/EC as amended

		
CORROSIVE (C)	HIGHLY FLAMMABLE (F)	DANGEROUS FOR THE ENVIRONMENT (N)

Other information

Substance and/or product listed in Directive 96/82/EC.

Safety data sheet



According to Regulation (EC) No. 1907/2006

DEZ

German Water Hazard Class (WGK)

This product contains a substance that is not classified by the German authorities. Therefore it should be treated as classified into class WGK 3.

16. OTHER INFORMATION

Relevant hazard statements		
Chemical name	Hazard statement(s) (GHS-classification)	
Diethylzinc	H250.	Catches fire spontaneously if exposed to air.
	H260.	In contact with water releases flammable gases which may ignite spontaneously.
	H314.	Causes severe skin burns and eye damage.
	H410.	Very toxic to aquatic life with long lasting effects.

R-phrases information		
Chemical name	R(isk) phrase(s) (EU classification)	
Diethylzinc	R14	Reacts violently with water
	R17	Spontaneously flammable in air
	R34	Causes burns
	R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

History
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Changes were made in section 1
<small>This information only concerns the above mentioned product and does not need to be valid if used with other product(s) or in any process. The information is to our best present knowledge correct and complete and is given in good faith but without warranty. It remains the user's own responsibility to make sure that the information is appropriate and complete for his special use of this product.</small>