

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Diethylzinc solution

Product Number : 296112  
Brand : Aldrich

Supplier : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052  
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation  
Product Safety - Americas Region  
1-800-521-8956

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

##### OSHA Hazards

Flammable liquid, Water Reactive, Target Organ Effect, Corrosive, Reproductive hazard

##### Target Organs

Peripheral nervous system., Kidney, Testes.

##### GHS Classification

Flammable liquids (Category 2)  
Pyrophoric liquids (Category 1)  
Substances, which in contact with water, emit flammable gases (Category 1)  
Skin corrosion (Category 1B)  
Serious eye damage (Category 1)  
Reproductive toxicity (Category 2)  
Specific target organ toxicity - single exposure (Category 3)  
Specific target organ toxicity - repeated exposure, Oral (Category 2), Nervous system  
Aspiration hazard (Category 1)  
Acute aquatic toxicity (Category 1)  
Chronic aquatic toxicity (Category 2)

##### GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour.  
H250 Catches fire spontaneously if exposed to air.  
H260 In contact with water releases flammable gases which may ignite spontaneously.  
H304 May be fatal if swallowed and enters airways.  
H314 Causes severe skin burns and eye damage.  
H336 May cause drowsiness or dizziness.

H361f Suspected of damaging fertility.  
H373 May cause damage to organs (Nervous system) through prolonged or repeated exposure if swallowed.  
H400 Very toxic to aquatic life.  
H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s)  
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.  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
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.  
P331 Do NOT induce vomiting.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.  
P422 Store contents under inert gas.

**Other hazards**

Reacts violently with water.

**HMIS Classification**

Health hazard: 3  
Chronic Health Hazard: \*  
Flammability: 3  
Physical hazards: 2

**NFPA Rating**

Health hazard: 3  
Fire: 3  
Reactivity Hazard: 2  
Special hazard.: W

**Potential Health Effects**

**Inhalation** May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Vapours may cause drowsiness and dizziness.  
**Skin** May be harmful if absorbed through skin. Causes skin burns.  
**Eyes** Causes eye burns.  
**Ingestion** May be harmful if swallowed. Aspiration hazard if swallowed - can enter lungs and cause damage.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Synonyms : Zincludiethyl  
Formula : C<sub>4</sub>H<sub>10</sub>Zn  
Molecular Weight : 123.51 g/mol

Component	Classification	Concentration
<b>n-Hexane</b>		
CAS-No. 110-54-3 EC-No. 203-777-6 Index-No. 601-037-00-0	Flam. Liq. 2; Skin Irrit. 2; Repr. 2; STOT SE 3; STOT RE 2; Asp. Tox. 1; Aquatic Chronic 2; H225, H304, H315, H336, H361f, H373, H411	70 - 90 %
<b>Diethylzinc</b>		
CAS-No. 557-20-0 EC-No. 209-161-3	Flam. Liq. 2; Pyr. Liq. 1; Water-react. 1; Skin Corr. 1B;	10 - 30 %

Index-No.	030-004-00-8	Aquatic Acute 1; Aquatic Chronic 1; H225, H250, H260, H314, H410, EUH014	
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For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

#### 4. FIRST AID MEASURES

##### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

##### If inhaled

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

##### In case of skin contact

Take off contaminated clothing and shoes immediately. 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. Continue rinsing eyes during transport to hospital.

##### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

#### 5. FIREFIGHTING MEASURES

##### Conditions of flammability

Flammable in the presence of a source of ignition when the temperature is above the flash point. May burn in presence of air, or emit a flammable gas in the presence of water or water vapour. Keep away from heat/sparks/open flame/hot surface. No smoking. Keep away from heat/sparks/open flame/hot surface/air/water. No smoking.

##### Suitable extinguishing media

Dry powder

##### Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

##### Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Zinc/zinc oxides

#### 6. ACCIDENTAL RELEASE MEASURES

##### Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

##### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

##### Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water.

#### 7. HANDLING AND STORAGE

##### Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

##### Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Never allow product to get in contact with water during storage.

Air sensitive.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
n-Hexane	110-54-3	TWA	50 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Central Nervous System impairment Eye irritation Peripheral neuropathy Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Danger of cutaneous absorption			
		TWA	50 ppm 180 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		TWA	500 ppm 1,800 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	The value in mg/m <sup>3</sup> is approximate.			
		TWA	50 ppm 180 mg/m <sup>3</sup>	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

### Personal protective equipment

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Protective gloves against thermal risks

#### Eye protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin and body protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form liquid  
Colour no data available

### Safety data

pH no data available  
Melting point/freezing point no data available  
Boiling point no data available  
Flash point -23 °C (-9 °F) - closed cup

Ignition temperature	no data available
Auto-ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	0.726 g/cm <sup>3</sup>
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapor density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

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## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Reacts violently with water.

### Conditions to avoid

Heat, flames and sparks. Extremes of temperature and direct sunlight. Exposure to moisture.

### Materials to avoid

Oxidizing agents, Strong oxidizing agents, Reacts violently with water.

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Zinc/zinc oxides

Other decomposition products - no data available

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## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Oral LD50

no data available

#### Inhalation LC50

no data available

#### Dermal LD50

no data available

### Other information on acute toxicity

no data available

### Skin corrosion/irritation

no data available

### Serious eye damage/eye irritation

Eyes: no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### **Carcinogenicity**

- IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
- NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
- OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

### **Reproductive toxicity**

no data available

### **Teratogenicity**

no data available

### **Specific target organ toxicity - single exposure (Globally Harmonized System)**

no data available

### **Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

no data available

### **Aspiration hazard**

no data available

### **Potential health effects**

- |                   |   |
|-------------------|---|
| <b>Inhalation</b> | May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Vapours may cause drowsiness and dizziness. |
| <b>Ingestion</b>  | May be harmful if swallowed. Aspiration hazard if swallowed - can enter lungs and cause damage.   |
| <b>Skin</b>       | May be harmful if absorbed through skin. Causes skin burns.   |
| <b>Eyes</b>       | Causes eye burns.   |

### **Signs and Symptoms of Exposure**

Warning: contains n-hexane (CAS#110-54-3) a suspected neurotoxin., Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache

### **Synergistic effects**

no data available

### **Additional Information**

RTECS: Not available

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## **12. ECOLOGICAL INFORMATION**

### **Toxicity**

no data available

### **Persistence and degradability**

no data available

### **Bioaccumulative potential**

no data available

### **Mobility in soil**

no data available

**PBT and vPvB assessment**

no data available

**Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life.

**13. DISPOSAL CONSIDERATIONS****Product**

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**

Dispose of as unused product.

**14. TRANSPORT INFORMATION****DOT (US)**

UN number: 3399 Class: 4.3 (3) Packing group: I  
 Proper shipping name: Organometallic substance, liquid, water-reactive, flammable (n-Hexane, Diethylzinc)  
 Reportable Quantity (RQ): 6024 lbs  
 Marine Pollutant: No  
 Poison Inhalation Hazard: No

**IMDG**

UN number: 3399 Class: 4.3 (3) Packing group: I EMS-No: F-G, S-N  
 Proper shipping name: ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE (Diethylzinc, n-Hexane)  
 Marine Pollutant: Marine pollutant

**IATA**

UN number: 3399 Class: 4.3 (3) Packing group: I  
 Proper shipping name: Organometallic substance, liquid, water-reactive, flammable (Diethylzinc, n-Hexane)

**15. REGULATORY INFORMATION****OSHA Hazards**

Flammable liquid, Water Reactive, Target Organ Effect, Corrosive, Reproductive hazard

**SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
n-Hexane	110-54-3	2007-07-01
Diethylzinc	557-20-0	1993-04-24

**SARA 311/312 Hazards**

Fire Hazard, Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

	CAS-No.	Revision Date
n-Hexane	110-54-3	2007-07-01
Diethylzinc	557-20-0	1993-04-24

**Pennsylvania Right To Know Components**

	CAS-No.	Revision Date
n-Hexane	110-54-3	2007-07-01
Diethylzinc	557-20-0	1993-04-24

## New Jersey Right To Know Components

n-Hexane  
Diethylzinc

CAS-No.  
110-54-3  
557-20-0

Revision Date  
2007-07-01  
1993-04-24

## California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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## 16. OTHER INFORMATION

### Text of H-code(s) and R-phrase(s) mentioned in Section 3

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Asp. Tox.	Aspiration hazard
EUH014	Reacts violently with water.
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H250	Catches fire spontaneously if exposed to air.
H260	In contact with water releases flammable gases which may ignite spontaneously.
H304	May be fatal if swallowed and enters airways.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H361f	Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
Pyr. Liq.	Pyrophoric liquids
Repr.	Reproductive toxicity
Skin Corr.	Skin corrosion
Skin Irrit.	Skin irritation
STOT RE	Specific target organ toxicity - repeated exposure
STOT SE	Specific target organ toxicity - single exposure
Water-react.	Substances, which in contact with water, emit flammable gases

### Further information

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