



## Safety Data Sheet – Resist Developer RD6

### 1. Identification of Substance / Preparation and Company

**Trade name:**

Resist Developer RD6

**Use of the substance/Preparation:**

*Industry sector:* semiconductor industry photolithography sector  
*Type of use:* solution for resist development

NOT FOR RECREATIONAL OR PERSONAL USE. NEVER CONSUME THIS PRODUCT.

**Identification of the company:**

Futurrex, Inc.  
12 Cork Hill Rd, Unit 16A  
Franklin, NJ 07416 USA

Telephone no. 1-888-999-4188 from 8:00 am to 6:00 pm (EST)

**Emergency telephone number:** 1-800-535-5053 (U.S. and Canada)  
1-352-323-3500 (International)  
Infotrac ID# 93284

**Person Responsible for SDS preparation:**

Aga Rusin, e-mail: info@futurrex.com

### 2. Hazards identification

**GHS CLASSIFICATION:**

HEALTH	ENVIROMENTAL	PHYSICAL
Acute Oral Toxicity: Category 5 Eye Irritation: Category 2A Skin Irritation: Category 2 Acute(Inhalation-Vapor): Category 4	Acute Toxicity: None Known Chronic Toxicity: None Known	None know

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Website: www.futurrex.com

**FUTURREX, INC**

*Resist Developer RD6*

Page 1 of 8



## Safety Data Sheet – Resist Developer RD6

**GHS LABEL:**

**SIGNAL WORD:** Warning!



GHS07

HAZARD STATEMENTS	PRECAUTIONARY STATEMENTS
H303 May be harmful if swallowed H320 Causes eye irritation H316 Causes mild skin irritation	P403 Keep container in a well-ventilated place. P233 Keep container closed. P262 Avoid contact with eyes, skin and clothing. P261 Avoid breathing vapors. P280 Wear protective gloves/protective clothing/eye protection/face protection P264 Wash hands thoroughly after handling.

### 3. Composition/information on ingredients

CAS#	EINECS	Chemical Name	Concentration
7732-18-5	215-185-5	Water	90-100
75-59-2	200-882-9	Tetramethylammonium hydroxide	0.1-3
		Surfactant	0.1-1

### 4. First aid measures

#### Description of necessary measures according to routes of exposure

##### Swallowed

If swallowed, do not induce vomiting. If person is conscious and able to swallow, have them drink a large volume of water and milk. IMMEDIATELY contact a physician. Never give anything by mouth to an unconscious person.

##### Eye

NOTE: Medical and emergency response personnel should avoid direct contact with contaminated clothing of the patient. IMMEDIATELY flush with water until no evidence of chemical remains (at least

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**FUTUREX, INC**

Resist Developer RD6

Page 2 of 8



## Safety Data Sheet – Resist Developer RD6

15-20 minutes). While flushing, forcibly hold the eye lids apart to ensure flushing of the entire eye surface. Immediately consult a physician.

### **Skin**

NOTE: Medical and emergency response personnel should avoid direct contact with contaminated clothing of the patient. IMMEDIATELY remove contaminated clothing, jewelry, and shoes and flush skin with sufficient volume of water until there is no evidence of the chemical on the affected area. Wash contaminated clothing before reuse, avoiding contact prior to cleaning. Seek medical attention immediately.

### **Inhaled**

Remove to fresh air. If breathing has stopped, give artificial respiration taking care to avoid contact with this product. Consult a physician.

### **Additional Information**

#### **Aggravated medical conditions caused by exposure**

Carcinogenicity Information: None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen. IARC: International Agency for Research on Cancer. NTP: National Toxicology Program. OSHA: Occupational Safety and Health Administration. ACGIH: American Conference of Government Industrial Hygienist.

## **5. Fire Fighting Measures**

### **Extinguishing Media**

Firefighters should wear full protective clothing including self-contained breathing apparatus. In case of fire use water spray, foam, dry chemical, CO<sub>2</sub>.

### **Special protective precautions and equipment for fire fighters**

No Data Available

### **Flammability Conditions**

This product is not readily combustible.

### **Additional Information**

This product may give rise to hazardous vapors in a fire.

**Hazchem Code** : N/A

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**FUTUREX, INC**

*Resist Developer RD6*

Page 3 of 8



## Safety Data Sheet – Resist Developer RD6

### 6. Accidental release measures

#### Personal precautions:

Prevent contact with skin and clothing. Wear protective clothing.

#### Environmental precautions:

Prevent the material from entering drains or water courses. Do not discharge directly to a water source. Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

#### Methods for cleaning up:

Take up with absorbent material and place in containers for disposal according to all local regulations. Follow all local regulations for reporting of releases

### 7. Handling and Storage

#### Precautions for safe handling

Ensure an eye bath & safety shower are available a ready for use.

#### Conditions for safe storage, including any incompatibles

This product is a combustible liquid with regard to AS 1940. Storage should be in accordance with applicable commonwealth, state or territory regulation. Do not mix with strong acids or alkaline materials. Store in a well ventilated place. Keep container tightly closed. Avoid breathing vapors or mist. Avoid contact with eyes, skin or clothing. Wash thoroughly after handling.

### 8. Exposure Controls, Personal Protection

#### Handling:

Do not get into eyes, on skin or on clothing. Do not breathe mist. Take off all contaminated clothing and wash before reuse. In case of accident or if you feel unwell, seek medical advice immediately (show label where possible). Do not eat or drink while handling. Wash thoroughly after handling.

#### Storage:

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**FUTUREX, INC**

*Resist Developer RD6*

Page 4 of 8



## Safety Data Sheet – Resist Developer RD6

Keep the container tightly closed (readily absorbs carbon dioxide from the air). Should be stored in plastic. Store away from incompatible materials.

### Personal Protection

**EYE/FACE PROTECTION :** Wear safety glasses. Wear coverall chemical goggles when possibility exists for eye and face contact due to splashing or spraying material. **RESPIRATOR :** An approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentration are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive pressure air-supplied respirator if there is any potential for an uncontrolled release, exposures levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection. **PROTECTIVE CLOTHING :** Wear impervious clothing, such as gloves, apron, boots or whole bodysuit as appropriate. Recommended glove and clothing material: Butyl Rubber

## 9. Physical and Chemical Properties

<b>Physical State</b>	liquid
<b>Color</b>	colorless
<b>Odor</b>	slight trimethylamine
<b>Odor Threshold</b>	Not available
<b>pH</b>	>12
<b>Melting Point</b>	0°C
<b>Boiling Point</b>	Approx.100°C
<b>Flash Point</b>	Not flammable
<b>Evaporation Rate</b>	Not available
<b>Flammability</b>	Non-flammable liquid
<b>Flammability Limits (as percentage volume in air)</b>	
<b>Lower Explosion Limit</b>	Not available
<b>Upper Explosion Limit</b>	Not available
<b>Vapor Pressure</b>	17.5 mmHg (20°C)
<b>Vapor Density</b>	Not available
<b>Specific Gravity/Relative Density</b>	1 (water =1 at 20°C)
<b>Solubility in water</b>	miscible
<b>Partition coefficient: n-octanol/water</b>	Not available
<b>Decomposition temperature</b>	Not available

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**FUTUREX, INC**

*Resist Developer RD6*

Page 5 of 8



## Safety Data Sheet – Resist Developer RD6

**Viscosity**

~1 cSt (20°C)

### 10. Stability and reactivity

**Chemical Stability:** Stable at room temperature in closed containers under normal storage and handling conditions. High heat will slowly degrade the product releasing trimethylamine and methanol.

**Conditions to Avoid:** Contact with incompatible materials.

**Incompatibilities with Other Materials:** oxidizers, acids

**Hazardous Polymerization:** Will not occur.

### 11. Toxicological information

#### Toxicity Data

May cause serious damage to health by prolonged exposure through inhalation, in contact with skin or eyes and if swallowed.

The following data has been reported in the RTECS database:

Subcutaneous-mouse LDLo = 19 mg/kg

Intravenous-rabbit LDLo = 1 mg/kg

Skin-guinea pig LD50 = 25 mg/kg (test conducted with solid tetramethylammonium pentahydrate, which is equivalent to 50% tetramethylammonium hydroxide)

Parenteral-frog LDLo = 5 mg/kg unreported-frog LDLo = 1515 ug/kg

Results from an experimental study in rats demonstrated lethality following one or more skin applications of tetramethylammonium hydroxide at dose levels of 30 mg/kg and higher. TMAH concentrations in excess of 0.25% have been shown to cause dermal irritation in experimental animals. Not identified as an OSHA, NTP or IARC carcinogen. No data available indicating any carcinogenic activity.

### 12. Ecological Information

Has been reported to be biodegradable in biological treatment facilitates if adjusted to neutral pH. Rate needs to be tested using local conditions. Will be detrimental to biological treatment works at high ph. Do not discharge directly to surface waters.

Acute aquatic toxicity testing on a pH neutralized solution of this compound has been shown to be toxic to the ceriodaphnia dubia (water flea).

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FUTUREX, INC

Resist Developer RD6

Page 6 of 8



## Safety Data Sheet – Resist Developer RD6

Acute aquatic toxicity testing on the Daphnia magna resulted in a 48 hour LC50 of 55.6 mg/l (with 95% confidence limits).  
Avoid release to the environment.

### 13. Disposal considerations

#### DISPOSAL METHODS

Dispose of waste and residues in accordance with local authority requirements.

#### OTHER DISPOSAL CONSIDERATIONS:

This material, when discarded, is not a hazardous waste as that term is defined by the Resource, Conservation and Recovery Act (RCRA), 40 CFR 261. Dispose of by incineration or recycle in accordance with local, state and federal regulations. Consult your attorney or appropriate regulatory officials for information on such disposal.

This product should not be dumped, spilled, rinsed or washed into sewers or public waterways.

### 14. Transport information

#### Department of Transportation (DOT) Requirements:

Not regulated as dangerous goods

#### IATA

Not regulated as dangerous goods

#### RID/ADR

Not regulated as dangerous goods

#### General Transportation Information for Bulk Shipments

Proper Shipping Name Chemicals N.O.S.

### 15. Regulatory information

#### TSCA (Toxic Substance Control Act):

All components of this mixture are listed on the US TSCA Chemical Inventory.

#### California Proposition 65

This product does not contain any Proposition 65 chemicals.

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**FUTUREX, INC**

*Resist Developer RD6*

Page 7 of 8



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Productivity Tools

# Safety Data Sheet

Creation date: 01/02/2010  
Last update: 02/14/2023

## Safety Data Sheet – Resist Developer RD6

This chemical is listed on the EINECS List.  
Toxicity information is available in Registry of Toxic Effects of Chemical Substances.  
NIOSH/RTECS Number for tetramethylammonium hydroxide - PA0875000.  
BRN (Beilstein Registry Number) for tetramethylammonium hydroxide - 3558708

### 16. Other information

#### Alterations/supplements to the previous editions:

General update

#### References:

[1] Globally Harmonized System of Classification and Labeling of Chemicals (GHS), Fourth revised edition, UNITED NATIONS, New York and Geneva, 2011

#### Sources of key data used to compile the datasheet

*The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Futurrex be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Futurrex has been advised of the possibility of such damages.*

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*Resist Developer RD6*

Page 8 of 8