



# ELECTRO-CHEMICAL DEVICES

Liquid Analytical Instrumentation for Process Control

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## Safety Data Sheet

Ammonium Hydroxide solution, 50% v/v with 0.1% Dimethylglyoxime

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### 1. Product Identification

**Synonyms:** CA-6 Analyzer Nickel Reagent #3

**CAS No.:** Not applicable to mixtures.

**Molecular Weight:** Not applicable to mixtures.

**Chemical Formula:** Not applicable to mixtures.

**Product Codes:** ECD P/N 2010493-1

**Manufacture By:** Electro-Chemical Devices, Inc.  
1681 Kettering  
Irvine, CA 92614  
Phone: (800) 729-1333

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### 2. Hazards Identification

#### Emergency Overview

**OSHA Hazards** Toxic by ingestion, Irritant, Corrosive

**Other hazards which do not result in classification:** Lachrymator

**GHS Classification** Acute toxicity, Oral (Category 4)  
Skin corrosion (Category 1A)  
Serious eye damage (Category 1)  
Acute aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements Contains: Sodium persulfate, Water



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## Hazard pictograms



**Signal word:** Danger

## Hazard statements

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H400 Very toxic to aquatic life.

## Precautionary statements

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.

## HMIS RATING

HEALTH HAZARD: 3

FLAMMABILITY: 0

PHYSICAL HAZARDS: 0

## NFPA RATING

HEALTH HAZARD: 3

FLAMMABILITY: 0

PHYSICAL HAZARDS: 0

## POTENTIAL HEALTH EFFECTS

### Inhalation

May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Causes respiratory tract irritation

### Skin

May be harmful if absorbed through skin. Causes skin burns. Causes skin irritation.



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**Eyes** Causes eye burns. Causes eye irritation.

**Ingestion** Toxic if swallowed.

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## 3. Composition/Information on Ingredients

**Synonyms:** Ammonia aqueous Synonyms: 2,3-Butanedionedioxime

Ammonia water Diacetyldioxime

**Formula:** H5NO Formula: C4H8N2O2

**Molecular Weight:** 35.05 g/mol Molecular Weight: 115.12 g/mol

### Component Classification Concentration

**Ammonium hydroxide:** CAS-No. 1336-21-6  
EC-No. 215-647-6  
Index-No. 007-001-01-2  
Skin Corr. 1B; Aquatic  
Acute 1; H314, H400

**50% Dimethylglyoxime:** CAS-No. 95-45-4  
EC-No. 202-420-1  
0.1% w/v

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## 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.



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**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

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## 5. Fire Fighting Measures

**Conditions of flammability:** Not flammable or combustible.

**Suitable extinguishing media** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for firefighters** Wear self-contained breathing apparatus for firefighting if necessary.

**Hazardous combustion products** Hazardous decomposition products formed under fire conditions. -Nitrogen oxides (NO<sub>x</sub>)

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## 6. Accidental Release Measures

**Personal precautions:** Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe 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:** Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal

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## 7. Handling and Storage

**Precautions for safe handling**

**Avoid contact with skin and eyes:** Avoid inhalation of vapor or mist.



**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.

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## 8. Exposure Controls/Personal Protection

Contains no substances with occupational exposure limit values

### 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.

**Full contact** Material: butyl-rubber  
Minimum layer thickness: 0.3 mm  
Break through time: 480 min

**Splash contact** Material: Nitrile rubber  
Minimum layer thickness: 0.2 mm  
Break through time: 60 min

**Eye protection:** Tightly fitting safety goggles. Face shield (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, 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 immediately after handling the product.

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## 9. Physical and Chemical Properties

<b>Appearance</b>	Form clear, liquid
<b>Color</b>	colorless
<b>Safety data</b>	
<b>pH</b>	11.7 at 20 °C (68 °F)
<b>Melting point/range:</b>	-60 °C (-76 °F)
<b>Boiling point</b>	38 -100 °C (100 -212 °F) at 1,013 hPa (760 mmHg)
<b>Flash point</b>	not applicable
<b>Ignition temperature</b>	no data available
<b>Auto-ignition temperature</b>	651 °C (1,204 °F)
<b>Lower explosion limit</b>	no data available
<b>Upper explosion limit</b>	no data available
<b>Vapor pressure</b>	1,651 hPa (1,238 mmHg) at 50 °C (122 °F)
<b>Density</b>	0.900 g/cm <sup>3</sup>
<b>Water solubility</b>	no data available



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**Partition coefficient:** n-octanol/water, no data available

**Relative vapor density** no data available

**Odor** no data available

**Odor 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:** no data available

**Conditions to avoid:** no data available

**Materials to avoid:** Zinc, Iron, Copper

**Hazardous decomposition products formed under fire conditions:** nitrogen oxides (NO<sub>x</sub>)

**Other decomposition products:** no data available

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## 11. Toxicological Information

Acute toxicity

**Oral LD50**

**LD50 Oral:** Rat -350 mg/kg

**Remarks:** Gastrointestinal: Other changes.  
Liver: Other changes. Kidney, Urethra,

**Bladder:** Other changes.

**Inhalation LC50:** no data available



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**Other information on acute toxicity:** no data available

**Skin corrosion/irritation:** Extremely corrosive and destructive to tissue

**Eyes:** Serious eye damage/eye irritation  
Rabbit -Severe eye irritation

**Respiratory:** no data available

**Germ cell mutagenicity:** Genotoxicity in vitro – Hamster Embryo  
Morphological transformation

**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

**Inhalation:** May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Causes respiratory tract irritation.





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<b>Ingestion:</b>	Toxic if swallowed.
<b>Skin:</b>	May be harmful if absorbed through skin. Causes skin burns. Causes skin irritation.
<b>Eyes:</b>	Causes eye burns. Causes eye irritation.

## Signs and Symptoms of Exposure

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, Nausea

**Synergistic effects** no data available

**Additional Information:** RTECS: EK2975000 (dimethylglyoxime)

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## 12. Ecological Information

### Toxicity

**Toxicity to fish:** mortality NOEC -Oncorhynchus tshawytscha -3.5 mg/l -3.0 d

**Toxicity to daphnia and other aquatic invertebrates LC50:** Daphnia magna (Water flea) 32 mg/l -50 h (Ammonium hydroxide)

**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**



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An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life

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## 13. Disposal Considerations

**PRODUCT** Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**CONTAMINATED PACKAGING:** Dispose of as unused product.

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## 14. Transport Information

### DOT (US)

**UN number:** 2672 Class: 8 Packing group: III  
**Proper shipping name:** Ammonia solution  
**Reportable Quantity (RQ):** 2611 lbs  
**Marine pollutant:** No  
**Poison Inhalation Hazard:** No

### IMDG

**UN number:** 2672 Class: 8 Packing group: III EMS-No: F-A, S-B  
**Proper shipping name:** AMMONIA SOLUTION  
**Marine pollutant:** No

### IATA

**UN number:** 2672 Class: 8 Packing group: III  
**Proper shipping name:** Ammonia solution

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## 15. Regulatory Information



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## OSHA HAZARDS

Toxic by ingestion, Irritant, Corrosive

## SARA 302 COMPONENTS

**SARA 302:** No components in this material are subject to reporting requirements of SARA Title III, Sec. 302.

## SARA 313 COMPONENTS

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

	<b>CAS-No.</b>	<b>Revision Date</b>
<b>Ammonium Hydroxide</b>	1336-21-6	2007-03-01

## SARA 311 / 312 HAZARDS

**Acute Health Hazard**

## Massachusetts Right To Know Components

	<b>CAS-No.</b>	<b>Revision Date</b>
<b>Ammonium Hydroxide</b>	1336-21-6	2007-03-01

## Pennsylvania Right To Know Components CAS Number Revision Date

<b>Water</b>	7732-18-5	
<b>Ammonium Hydroxide</b>	7775-27-1	2007-03-01
<b>Butanedione dioxime</b>	95-45-4	

## New Jersey Right To Know Components CAS Number Revision Date

<b>Ammonium Hydroxide</b>	7775-27-1	2007-03-01
<b>Butanedione dioxime</b>	95-45-4	

## California Prop. 65 Components

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



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## 16. Other Information

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

#### Aquatic Acute Acute aquatic toxicity

**H314** Causes severe skin burns and eye damage.

**H400** Very toxic to aquatic life.

**Skin Corr.** Skin corrosion

**Label Hazard Warning:** As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes and clothing.

**Product Use:** Laboratory Reagent.

**Revision Information:** MSDS-2010493-1 rev. a Jan. 2014

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