



Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

SECTION 1: Identification

1.1. Product Identifier

Trade Name or Designation Alkaline-Iodide-Azide, Alsterberg Formulation
for Dissolved Oxygen (DO) Analysis

Product Number 540

Other Identifying Product Numbers 540-1, 540-16, 540-32

1.2. Recommended Use and Restrictions on Use

General Laboratory Reagent

1.3. Details of the Supplier of the Safety Data Sheet

Company Ricca Chemical Company

Address 412 West Fork Drive

Arlington, TX 76012 USA

Telephone 888-467-4222

1.4. Emergency Telephone Number (24 hours)

CHEMTREC (USA) 800-424-9300

CHEMTREC (International) 1+ 703-527-3887

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SECTION 2: Hazard(s) Identification

2.1. Classification of the Substance or Mixture

Hazard Class	Category	Hazard Statements	Precautionary Statements
Skin Corrosion / Irritation	Category 1	H314	P260,P264,P280,P301+P330+P331, P303+P361+P353,P363,P304+P340, P310,P321,P305+P351+P338,P405, P501
Serious Eye Damage / Eye Irritation	Category 1	H318	P280,P305+P351+P338,P310
Specific Target Organ Toxicity - Repeated Exposure	Category 1	H372	P260,P264,P270,P314,P501
Hazardous to the Aquatic Environment, Short-term (Acute)	Acute 3	H402	P273,P501
Hazardous to the Aquatic Environment, Long-term (Chronic)	Chronic 3	H412	P273,P501

2.2. GHS Label Elements

Pictograms:



Signal Word: **Danger**

Hazard Statements:

NOTE: Hazard statements may be combined on labels to improve clarity and readability.

Hazard Number	Hazard Statement
H314	Causes severe skin burns and eye damage
H372	Causes damage to central nervous system, thyroid through prolonged or repeated exposure
H412	Harmful to aquatic life with long lasting effects

Precautionary Statements:

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Prevention

Precautionary Number	Precautionary Statement
P260	Do not breathe fumes or mist.
P264	Wash hands, arms, and face thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves and eye protection.

Response

Precautionary Number	Precautionary Statement
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P304+P340	IF INHALED: Remove person to fresh air and keep 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.
P314	Get medical advice or attention if you feel unwell.
P363	Wash contaminated clothing before reuse.

Storage

Precautionary Number	Precautionary Statement
P405	Store locked up.

Disposal

Precautionary Number	Precautionary Statement
P501	Dispose of contents/container to suitable waste stream in accordance with local, state, federal, and international regulations.

2.3. Hazards not Otherwise Classified

No other hazards identified.

2.4. Ingredients of Unknown Acute Toxicity

27.4 percent of this mixture consists of ingredient(s) of unknown acute oral and dermal toxicity. 35.5 percent of this mixture consists of ingredient(s) of unknown acute inhalation toxicity.

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SECTION 3: Composition / Information on Ingredients

3.1. Components of Mixture

Chemical Name (IUPAC)	Common Name and Synonyms	CAS Number	Weight%
water	Water	7732-18-5	63.97
sodium hydroxide	Sodium Hydroxide; caustic soda	1310-73-2	27.37
potassium iodide	Potassium Iodide	7681-11-0	8.12
sodium azide	Sodium Azide; Sodium azide (NaN ₃)	26628-22-8	0.54

SECTION 4: First-Aid Measures

4.1. Description of Necessary Measures

- Eye Contact:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Corrosive! Causes irritation and burns. Can cause burns that may lead to permanent impairment of vision, including blindness.
- Ingestion:** IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Do not induce vomiting. Give large quantity of water. Call a physician immediately.
- Inhalation:** IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- Skin Contact:** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Causes severe burns.

4.2. Most Important Symptoms and Effects, Acute and Delayed

Causes severe skin burns and eye damage CAUTION! Corrosive. Causes severe burns. May be fatal if swallowed. Harmful if inhaled. Wash areas of contact with water for at least 15 minutes. Call a physician if irritation develops. If ingested, dilute with water and call a physician. Do not induce vomiting. For eyes, flush out with plenty of water for at least 15 minutes. Call a physician. Reacts violently with acids. EYE CONTACT: Corrosive! Causes irritation and burns. Can cause burns that may lead to permanent impairment of vision, including blindness. SKIN CONTACT: Causes severe burns. CHRONIC EFFECTS / CARCINOGENICITY: Repeated exposures to Sodium Hydroxide solutions has a destructive effect on tissue.

4.3. Immediate Medical Attention or Special Treatment Needed

Immediately call a poison center or doctor. Irrigate immediately with large quantity of water for at least 15 minutes. Call a physician if irritation develops. Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen. Flush with plenty of water for at least 15 minutes. Call a physician if irritation develops. Do not induce vomiting. Give large quantity of water. Call a physician immediately.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing Media

Use extinguishing media appropriate for surrounding fire.

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5.2. Specific Hazards Arising from the Substance or Mixture in a Fire

Not combustible.

5.3. Special Protective Equipment and Precautions for Firefighters

Wear special protective clothing and positive pressure self-contained breathing apparatus. Butyl rubber, natural rubber, Neoprene, nitrile rubber, polyethylene, polyvinyl chloride, Teflon, Viton, or Saranex barrier recommended.

SECTION 6: Accidental Release Measures

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Wear protective gloves and eye protection.

6.2. Cleanup and Containment Methods and Materials

Keep water away from release. Stop or control the leak, if this can be done without undue risk. Prompt cleanup and removal are necessary. Shovel into suitable dry container. Control runoff and isolate discharged material for proper disposal.

SECTION 7: Handling and Storage

7.1. Precautions for Safe Handling and Storage Conditions

Store locked up. As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage. Do not mix with acids. Contact with acid generates toxic Hydrazoic Acid fumes.

SECTION 8: Exposure Controls / Personal Protection

8.1. Exposure Limits

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U.S. OSHA - Permissible Exposure Limits (PEL) - Time Weighted Averages (TWA)

Chemical Name	CAS Number	Exposure Limit
Sodium Hydroxide	1310-73-2	2 mg/m3 TWA

U.S. OSHA - Permissible Exposure Limits (PEL) - Ceiling Limits

No limits found.

U.S. OSHA - Permissible Exposure Limits (PEL) - Short Term Exposure Limits (STEL)

No limits found.

U.S. OSHA - Specifically Regulated Chemicals

No limits found.

ACGIH - Threshold Limit Values - Ceilings (TLV-C)

Chemical Name	CAS Number	Exposure Limit
Sodium Hydroxide	1310-73-2	2 mg/m3 Ceiling
Sodium Azide	26628-22-8	0.29 mg/m3 Ceiling (as Sodium azide); 0.11 ppm Ceiling (as Hydrazoic acid vapor)

ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)

No limits found.

ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)

Chemical Name	CAS Number	Exposure Limit
Potassium Iodide	7681-11-0	"0.01 mg/m3 TWA (inhalable particulate matter, as I)" As Iodides [RR-42509-2]

8.2. Engineering Controls

No specific controls are needed. Normal room ventilation is adequate.

8.3. Individual Protective Measures and Personal Protective Equipment

Respiratory Protection: Normal room ventilation is adequate.

Skin Protection: Chemical resistant gloves.

Eye Protection: Safety glasses or goggles.

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SECTION 9: Physical and Chemical Properties

9.1. Basic Physical and Chemical Properties

Physical State:	liquid
Color:	Colorless
Odor:	Data not available.
Odor Threshold:	Data not available.
Melting/Freezing Point:	Data not available.
Boiling Point/Range:	Approximately 104°C
Flammability:	Data not available.
Flammability/Explosive Limits:	Data not available.
Flash Point:	Not flammable
Auto-Ignition Temperature:	Data not available.
Decomposition Temperature:	Data not available.
pH:	> 13
Kinematic Viscosity:	Data not available.
Solubility:	miscible
Vapor Pressure:	Data not available.
Evaporation Rate:	Data not available.
Relative Density:	1.55
Relative Vapor Density:	Data not available.
Particle Characteristics:	Data not available.
Partition Coefficient n-octanol/water, log	Data not available.

SECTION 10: Stability and Reactivity

10.1. Reactivity and Chemical Stability

Stable under normal conditions of use and storage.

10.2. Possibility of Hazardous Reactions

Data not available.

10.3. Conditions to Avoid and Incompatible Materials

Acids, organic halogen compounds, metals such as aluminum, tin and zinc.

10.4. Hazardous Decomposition Products

Will not occur.

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SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity - Oral Exposure:

Oral acute toxicity estimate (ATE): 3168 mg/kg(calculated)

Chemical Name	CAS Number	Toxicity
Sodium Azide	26628-22-8	Oral LD50 Rat 27 mg/kg (Source: NZ_CCID)
Potassium Iodide	7681-11-0	Oral LD50 Rat 2779 mg/kg (Source: Canada_WHMIS)

Acute Toxicity - Dermal Exposure:

Dermal acute toxicity estimate (ATE): 2690 mg/kg(calculated)

Chemical Name	CAS Number	Toxicity
Sodium Azide	26628-22-8	Dermal LD50 Rabbit 20 mg/kg (Source: NLM_HSDB)
Potassium Iodide	7681-11-0	Dermal LD50 Rat >2000 mg/kg (Source: ECHA_API)

Acute Toxicity - Inhalation Exposure:

Inhalation acute toxicity estimate (ATE, dust or mist): 5.9731 mg/L, 4 h(calculated)

Chemical Name	CAS Number	Toxicity
Sodium Azide	26628-22-8	Inhalation LC50 Rat 0.054 - 0.52 mg/L 4 h (dust, Source: ECHA_API)

11.2 Carcinogenicity:

International Agency for Research on Cancer (IARC)

Chemical Name	CAS Number	Classification
		No data found.

National Toxicology Program (NTP)

Chemical Name	CAS Number	Classification
Sodium Azide	26628-22-8	Male Rat - No Evidence; Female Rat - No Evidence; Male Mice - Not Tested; Female Mice - Not Tested (TR-389)

U.S. OSHA specifically regulated carcinogens

Chemical Name	CAS Number	Classification
		No data found.

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11.3 Additional Toxicology Information:

Causes severe skin burns and eye damage. Causes damage to central nervous system, thyroid through prolonged or repeated exposure.

SECTION 12: Ecological Information

12.1. Ecotoxicity

Chemical Name	CAS Number	Species	Exposure	Toxicity
Sodium Hydroxide	1310-73-2	Freshwater Fish	Acute	LC50 96 h Oncorhynchus mykiss 45.4 mg/L [static] (IUCLID)
Sodium Azide	26628-22-8	Freshwater Fish	Acute	LC50 96 h Oncorhynchus mykiss 0.8 mg/L; LC50 96 h Lepomis macrochirus 0.7 mg/L; LC50 96 h Pimephales promelas 5.46 mg/L [flow-through]
Potassium Iodide	7681-11-0	Freshwater Fish	Acute	LC50 96 h Danio rerio >100 mg/L [static] (ECHA)

12.2. Persistence and Degradability

Data not available.

12.3. Bioaccumulative Potential

Data not available.

12.4. Mobility in soil

Data not available.

12.5. Other Adverse Ecological Effects

Data not available.

SECTION 13: Disposal Considerations

13.1. Waste Treatment Methods

Data not available.

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SECTION 14: Transportation Information

14.1 Transportation by Land - Department of Transportation (DOT, United States of America)

Sizes: 1 L, 4 L, 500 mL

UN Number: UN1824

Proper Shipping Name: Sodium Hydroxide Solution

Hazard Class: 8

Packing Group: II

Hazard Label(s):



14.2 Transportation by Air - International Air Transport Association (IATA)

Sizes: 1 L, 4 L, 500 mL

UN Number: UN1824

Proper Shipping Name: Sodium Hydroxide Solution

Hazard Class: 8

Packing Group: II

Hazard Label(s):



14.3 Transportation of Dangerous Goods (TDG, Canada)

Sizes: 1 L, 4 L, 500 mL

UN Number: UN1824

Proper Shipping Name: SODIUM HYDROXIDE SOLUTION

Hazard Class: 8

Packing Group: II

Hazard Label(s):



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SECTION 15: Regulatory Information

15.01. Occupational Safety and Health Administration (OSHA) Hazards

Chemical Name	CAS Number	Regulatory Information
		No data found.

15.02. Superfund Amendments and Reauthorization Act (SARA) 302 Extremely Hazardous Substances

Chemical Name	CAS Number	RQ	TPQ
Sodium Azide	26628-22-8	500 lb TPQ (this material is a reactive solid, the TPQ does not default to 10000 pounds for non-powder, non-molten, non-solution form)	1000 lb EPCRA RQ

15.03. Superfund Amendments and Reauthorization Act (SARA) 311/312 Hazardous Chemicals

Chemical Name	CAS Number	Regulatory Information
Sodium Hydroxide	1310-73-2	1000 lb final RQ; 454 kg final RQ
Sodium Azide	26628-22-8	1000 lb final RQ; 454 kg final RQ

15.04. Superfund Amendments and Reauthorization Act (SARA) 313 Toxics Release Inventory (TRI)

Chemical Name	CAS Number	List	Regulatory Information
Sodium Azide	26628-22-8	Emission Reporting	1.0 % de minimis concentration

15.05. Massachusetts Right-to-Know Substance List

Chemical Name	CAS Number	Regulatory Information
Sodium Hydroxide	1310-73-2	Present
Sodium Azide	26628-22-8	Extraordinarily hazardous

15.06. Pennsylvania Right-to-Know Hazardous Substances

Chemical Name	CAS Number	Regulatory Information
Sodium Hydroxide	1310-73-2	Environmental hazard
Sodium Azide	26628-22-8	Environmental hazard

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15.07. New Jersey Worker and Community Right-to-Know Components

Chemical Name	CAS Number	Regulatory Information
Sodium Hydroxide	1310-73-2	sn 1706
Sodium Azide	26628-22-8	sn 1684

15.08. California Proposition 65

Chemical Name	CAS Number	Regulatory Information
No data found.		

15.09. Canada Domestic Substances List / Non-Domestic Substances List (DSL/NDSL)

Chemical Name	CAS Number	List	Status
Sodium Hydroxide	1310-73-2	DSL	Present
Sodium Azide	26628-22-8	DSL	Present
Potassium Iodide	7681-11-0	DSL	Present
Water	7732-18-5	DSL	Present

15.10. United States of America Toxic Substances Control Act (TSCA) List

Chemical Name	CAS Number	Status
Sodium Hydroxide	1310-73-2	Present (ACTIVE)
Sodium Azide	26628-22-8	Present (ACTIVE)
Potassium Iodide	7681-11-0	Present (ACTIVE)
Water	7732-18-5	Present [XU] (ACTIVE)

15.11. European Inventory of Existing Commercial Chemical Substances (EINECS), European List of Notified Chemical Substances (ELINCS), and No Longer Polymers (NLP)

Chemical Name	CAS Number	List	Number
Sodium Hydroxide	1310-73-2	EINECS	215-185-5
Sodium Azide	26628-22-8	EINECS	247-852-1
Potassium Iodide	7681-11-0	EINECS	231-659-4
Water	7732-18-5	EINECS	231-791-2

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15.12. China - Inventory of Existing chemical Substances (IECSC)

Chemical Name	CAS Number	Status
Sodium Hydroxide	1310-73-2	Present [27689]
Sodium Azide	26628-22-8	Present [05840]
Potassium Iodide	7681-11-0	Present [05768]
Water	7732-18-5	Present [32224]

15.13. Korea - Existing Chemicals Inventory (KECI/KECL)

Chemical Name	CAS Number	List	Status
Sodium Hydroxide	1310-73-2	Annex 1	Present [KE-31487]
Sodium Azide	26628-22-8	Annex 1	Present [KE-31357]
Potassium Iodide	7681-11-0	Annex 1	Present [KE-29149]
Water	7732-18-5	Annex 1	Present [KE-35400]

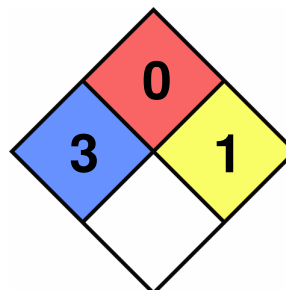
15.14. Japan - Existing and New Chemical Substances Inventory (ENCS)

Chemical Name	CAS Number	MITI No.
Sodium Hydroxide	1310-73-2	(1)-410
Sodium Azide	26628-22-8	(1)-482
Potassium Iodide	7681-11-0	(1)-439
Water	7732-18-5	- (listed on Japanese Pharmacopoeia 8th Edition)

SECTION 16: Other Information

16.1 National Fire Protection Associate (NFPA) Rating

Health: 3
Flammability: 0
Reactivity: 1
Special Hazard:





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16.2 Document Revision

Last Revision Date:

2026-05-25

DISCLAIMER

When handled properly by qualified personnel, the product described herein does not present a significant health or safety hazard. Alteration of its characteristics by concentration, evaporation, addition of other substances, or other means may present hazards not specifically addressed herein and which must be evaluated by the user. The information furnished herein is believed to be accurate and represents the best data currently available to us. No warranty, expressed or implied, is made and RICCA CHEMICAL COMPANY assumes no legal responsibility or liability whatsoever resulting from its use.