

\*\*\*\* MATERIAL SAFETY DATA SHEET \*\*\*\*  
 Iodine Solution 0.1 N  
 45378

\*\*\*\* SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION \*\*\*\*  
 MSDS Name: Iodine Solution 0.1 N  
 Catalog Number: Sig 6 1, S1861, SLN4900  
 Synonyms: Iodine Solution; Iodine, Potassium Iodide Solution; Iodine Solution 1/N  
 Company Identification: Fisher Scientific  
 1 Reagent Lang  
 Fairlawn, NJ 07410  
 For information, call: 201-796-7100  
 Emergency Number: 201-796-7100  
 For CHEMTREC assistance, call: 800-424-9300  
 For international CHEMTREC assistance, call: 703-527-3887

\*\*\*\* SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS \*\*\*\*

CAS#	Chemical Name	%	EINECS#
7553-56-2	Iodine	1.3	231-442-4
7681-11-0	Potassium iodide	2.8	231-659-4
7732-18-5	Water	95.0	231-791-2

Hazard Symbols: Xi  
 Risk Phrases: 22  
 \*\*\*\* SECTION 3 - HAZARDS IDENTIFICATION \*\*\*\*

EMERGENCY OVERVIEW  
 Appearance: dark amber.  
 Caution: May cause fetal effects based upon animal studies. May cause eye and skin irritation. May cause respiratory and digestive tract irritation.  
 Target Organs: Central nervous system, respiratory system, cardiovascular system.

Potential Health Effects  
 Eye: May cause eye irritation.  
 Skin: May cause skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.  
 Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea.  
 Inhalation: May cause respiratory tract irritation.  
 Chronic: Chronic exposure can lead to iodism characterized by salivation, nasal discharge, sneezing, conjunctivitis, fever, laryngitis, bronchitis, stomatitis, and skin rashes.

\*\*\*\* SECTION 4 - FIRST AID MEASURES \*\*\*\*  
 Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid.  
 Skin: Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.  
 Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.  
 Inhalation: Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. Get medical aid if cough or other symptoms appear.  
 Note: Treat symptomatically and supportively.

\*\*\*\* SECTION 5 - FIRE FIGHTING MEASURES \*\*\*\*  
 General Information:  
 As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Material will not burn.  
 Extinguishing Media:  
 Use extinguishing media most appropriate for the surrounding fire.

Aut ignition Temperature: Not applicable.  
 Flash Point: Not applicable.  
 NFPA Rating: Not published.  
 Explosion Limits, Lower: Not available.  
 Upper: Not available.

\*\*\*\* SECTION 6 - ACCIDENTAL RELEASE MEASURES \*\*\*\*  
 General Information: Use proper personal protective equipment as indicated in Section 8.  
 Spills/Leaks:  
 Clean up spills immediately, observing precautions in the Protective Equipment section. Cover with sand, dry lime or soda ash and place in a closed container for disposal.  
 \*\*\*\* SECTION 7 - HANDLING and STORAGE \*\*\*\*  
 Handling:  
 Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation.  
 Storage:  
 Store in a cool, dry place.

\*\*\*\* SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION \*\*\*\*  
 Engineering Controls:  
 Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Iodine	C 0.1 ppm; C 1.0 mg/m <sup>3</sup>	2 ppm IDLH	C 0.1 ppm; C 1 mg/m <sup>3</sup>
Potassium iodide	none listed	none listed	none listed
Water	none listed	none listed	none listed

OSHA Vacated PELs:  
 Iodine: No OSHA Vacated PELs are listed for this chemical.  
 Potassium iodide: No OSHA Vacated PELs are listed for this chemical.  
 Water: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment  
 Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN186.  
 Skin: Wear appropriate protective gloves to prevent skin exposure.  
 Clothing: Wear appropriate protective clothing to prevent skin exposure.  
 Respirators:  
 A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

\*\*\*\* SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES \*\*\*\*  
 Physical State: Liquid  
 Appearance: dark amber  
 Odor: Iodine-like  
 Boiling Point: Not available.  
 Vapor Pressure: Not available.  
 Vapor Density: 14 mm Hg  
 Evaporation Rate: 0.7  
 Viscosity: Not available.  
 Boiling Point: 100 deg C  
 Freezing/Melting Point: 0 deg C  
 Decomposition Temperature: Not available.  
 Solubility: Soluble in water.  
 Specific Gravity/Density: 1.0  
 Molecular Formula: Mixture  
 Molecular Weight: Not available.

\*\*\*\* SECTION 10 - STABILITY AND REACTIVITY \*\*\*\*

Chemical Stability:  
Stable under normal temperatures and pressures.  
Conditions to Avoid:  
Incompatible materials:  
Incompatibilities with Other Materials:  
Powdered aluminum, active metals, strong reducing agents, Acetylene  
with acetaldehyde causes explosive reactions with iodine. Mixtures  
with ammonium hydroxide form shock sensitive compounds.  
Hazardous Decomposition Products:  
Hydrogen iodide, iodine, iodide ions (I-).  
Hazardous Polymerization: Will not occur.

\*\*\*\* SECTION 11 - TOXICOLOGICAL INFORMATION \*\*\*\*

RTECS#:  
CAS# 7553-56-2; NN1575000  
CAS# 7681-11-0; TT2975000  
CAS# 7732-18-5; ZC0110000  
LD50/LC50:  
CAS# 7553-56-2; Oral, mouse: LD50 = 22 gm/kg; Oral, rabbit: LD50 =  
10 gm/kg; Oral, rat: LD50 = 14 gm/kg.  
CAS# 7681-11-0;  
CAS# 7732-18-5; Oral, rat: LD50 = 90 mL/kg.

Carcinogenicity:  
Iodine listed by ACGIH, IARC, NIOSH, NTP, or OSHA.  
Potassium iodide  
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.  
Water  
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.  
Teratogenicity:  
Potassium iodide has been observed to cause developmental  
abnormalities of the endocrine system in human fetuses.

\*\*\*\* SECTION 12 - ECOLOGICAL INFORMATION \*\*\*\*

\*\*\*\* SECTION 13 - DISPOSAL CONSIDERATIONS \*\*\*\*

Dispose of in a manner consistent with federal, state, and local regulations.  
RCRA D-Series Maximum Concentration of Contaminants:  
None listed.  
RCRA D-Series Chronic Toxicity Reference Levels: None listed.  
RCRA F-Series: None listed.  
RCRA P-Series: None listed.  
RCRA U-Series: None listed.

\*\*\*\* SECTION 14 - TRANSPORT INFORMATION \*\*\*\*

US DOT  
IMO No information available  
IATA No information available.  
RID/ADR No information available.  
Canadian TDG No information available.  
\*\*\*\* SECTION 15 - REGULATORY INFORMATION \*\*\*\*  
US FEDERAL  
TSCA  
CAS# 7553-56-2 is listed on the TSCA inventory.  
CAS# 7681-11-0 is listed on the TSCA inventory.  
CAS# 7732-18-5 is listed on the TSCA inventory.  
Health & Safety Reporting List  
Chemical Test Rules  
None of the chemicals in this product are on the Health & Safety Reporting List.  
Section 12b  
None of the chemicals are listed under TSCA Section 12b.  
TSCA Significant New Use Rule  
None of the chemicals in this material have a SNUR under TSCA.  
SARA  
Section 302 (RQ)  
None of the chemicals in this material have an RQ.  
Section 302 (TPQ)  
None of the chemicals in this product have a TPQ.  
SARA Codes  
CAS # 7553-56-2: acute, chronic, flammable.  
CAS # 7681-11-0: acute, chronic.  
Section 313  
None of the chemicals are reportable under Section 313.  
Clean Air Act:  
This material does not contain any hazardous air pollutants.  
This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.  
Clean Water Act:  
None of the chemicals in this product are listed as Hazardous  
Substances under the CWA.  
None of the chemicals in this product are listed as Priority  
Pollutants under the CWA.  
None of the chemicals in this product are listed as Toxic Pollutants  
under the CWA.  
OSHA:  
None of the chemicals in this product are considered highly hazardous  
by OSHA.

STATE

Iodine can be found on the following state right to know lists:  
California, New Jersey, Florida, Pennsylvania, Minnesota,  
Massachusetts,  
Potassium iodide is not present on state lists from CA, PA, MN, MA,  
FL, or NJ.  
Water is not present on state lists from CA, PA, MN, MA, FL, or NJ.  
California No Significant Risk Level:  
None of the chemicals in this product are listed.  
European/International Regulations  
European Labeling in Accordance with EC Directives  
Hazard Symbols: Xi  
Risk Phrases:  
R 22: Harmful if swallowed.

Safety Phrases:  
S 24/25: Avoid contact with skin and eyes.  
WGK (Water Danger/Protection)  
CAS# 7553-56-2: 1  
CAS# 7681-11-0: 1  
CAS# 7732-18-5: No information available.

Canada

CAS# 7553-56-2 is listed on Canada's DSL/NDSL List.  
CAS# 7681-11-0 is listed on Canada's DSL/NDSL List.  
CAS# 7732-18-5 is listed on Canada's DSL/NDSL List.  
This product has a WHMIS classification of D2A.  
CAS# 7553-56-2 is not listed on Canada's ingredient Disclosure List.  
CAS# 7681-11-0 is not listed on Canada's ingredient Disclosure List.  
CAS# 7732-18-5 is not listed on Canada's ingredient Disclosure List.  
Exposure Limits:  
CAS# 7553-56-2: OEL-ARAB Republic of Egypt:TWA 0.1 ppm (0.1 mg/m<sup>3</sup>);  
OEL-AUSTRALIA:TWA 0.1 ppm (1 mg/m<sup>3</sup>); OEL-BELGIUM:STEL 0.1 ppm (1 mg/m<sup>3</sup>);  
OEL-DENMARK:STEL 1 ppm (1 mg/m<sup>3</sup>); OEL-FINLAND:STEL 0.1 ppm (1 mg/m<sup>3</sup>);  
OEL-FRANCE:STEL 0.1 ppm (1 mg/m<sup>3</sup>); OEL-GERMANY:TWA 0.1 ppm (1  
mg/m<sup>3</sup>); OEL-HUNGARY:TWA 1 mg/m<sup>3</sup>;STEL 2 mg/m<sup>3</sup>; OEL-JAPAN:TWA 0.1 ppm (1  
mg/m<sup>3</sup>);STEL 1 mg/m<sup>3</sup>; OEL-THE NETHERLANDS:TWA 0.1 ppm (1 mg/m<sup>3</sup>);  
OEL-THE PHILIPPINES:TWA 0.1 ppm (1 mg/m<sup>3</sup>); OEL-POLAND:TWA 1 mg/m<sup>3</sup>; OEL-  
L-RUSSIA:TWA 0.1 ppm;STEL 1 mg/m<sup>3</sup>;skin: OEL-SWEDEN:STEL 0.1 ppm (1 mg/  
m<sup>3</sup>); OEL-SWITZERLAND:TWA 0.1 ppm (1 mg/m<sup>3</sup>);STEL 0.2 pp (2 mg/m<sup>3</sup>); OEL-  
THAILAND:TWA 0.1 ppm (1 mg/m<sup>3</sup>); OEL-TURKEY:TWA 0.1 ppm (1 mg/m<sup>3</sup>); OEL-  
UNITED KINGDOM:STEL 0.1 ppm (1 mg/m<sup>3</sup>); OEL IN ALBANIA, COLOMBIA, JORD  
AN, KOREA check ACGIH TLV; OEL IN NEW ZEALAND, SINGAPORE, VIETNAM chec  
k ACGI TLV

\*\*\*\* SECTION 16 - ADDITIONAL INFORMATION \*\*\*\*

MSDS Creation Date: 7/13/1995 Revision #7 Date: 12/12/1997

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  
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should make their own investigations to determine the suitability of the  
information for their particular purposes. In no way shall Fisher be liable  
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or any special, indirect, incidental, consequential or exemplary  
damages, howsoever arising, even if Fisher has been advised of  
the possibility of such damages.