

ROCKLAND COLLOID LLC
FA-1 SENSITIZER MATERIAL SAFETY DATA SHEET
Trade Name: FA-1 SENSITIZER

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General Information
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Item Name: FERRIC AMMONIUM CITRATE SOLUTION (PART 1 OF 3-PART PACKAGE)
Company's Name: ROCKLAND COLLOID LLC
Company's P. O. Box: P.O. BOX 3120
Company's City: OREGON CITY
Company's State: OR
Company's Country: US
Company's Zip Code: 97045
Company's Emergency Ph #: 503-655-4152
Date MSDS Prepared: 01JAN96
Safety Data Review Date: 1/03/22
Unit Of Issue: 30 CC'S
Type of Container: PLASTIC BOTTLE

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Ingredients/Identity Information
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Proprietary: NO
Ingredient: CITRIC ACID, AMMONIUM IRON (3+) SALT; (FERRIC AMMONIUM
CITRATE) 50% SOLUTION (SARA III)
Ingredient Sequence No.: 01
Percent: 50
NIOSH (RTECS) Number: GE7540000
CAS Number: 1185-57-5
OSHA PEL: 1 MG/M3 (FE)
ACGIH TLV: 1 MG/M3 (FE)
Proprietary: NO
Ingredient: WATER
Ingredient Sequence Number: 02
Percent: 50
NIOSH (RTECS) Number: N/A
CAS Number: N/A

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Physical/Chemical Characteristics
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Appearance and Odor: GREEN LIQUID, ODORLESS.
Boiling Point: N/A
Melting Point: N/A
Vapor Pressure (MM Hg/70 F): N/A
Vapor Density (Air=1): N/A
Specific Gravity: N/A
Evaporation Rate And Ref: NOT APPLICABLE
Solubility In Water: APPRECIABLE (>10%)
Percent Volatiles By Volume: 0
pH: N/A

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Fire and Explosion Hazard Data
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Flash Point: NOT APPLICABLE
Flash Point Method: CC
Lower Explosive Limit: N/A
Upper Explosive Limit: N/A
Extinguishing Media: USE EXTINGUISHING MEDIA APPROPRIATE FOR
SURROUNDING FIRE.

Special Fire Fighting Proc: USE NIOSH/MSHA APPROVED SCBA & FULL PROTECTIVE EQUIPMENT (FP N).

Unusual Fire And Explosive Hazards: NONE IDENTIFIED.

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Reactivity Data
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Stability: YES

Cond To Avoid (Stability): HEAT, LIGHT.

Materials To Avoid: NONE IDENTIFIED.

Hazardous Decomposition Products: AMMONIA, CARBON MONOXIDE, CARBON DIOXIDE.

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): NOT RELEVANT

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Health Hazard Data
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LD50-LC50 Mixture: NONE SPECIFIED BY MANUFACTURER.

Route of Entry - Inhalation: NO

Route of Entry - Skin: YES

Route of Entry - Ingestion: NO

Health Hazard Acute And Chronic: ACUTE: SKIN CONTACT: PROLONGED CONTACT MAY CAUSE IRRITATION. WASH WITH SOAP AND WATER.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: NOT RELEVANT

Signs/Symptoms of Overexposure: SEE HEALTH HAZARDS.

Med Condition Aggravated By Exp: NONE IDENTIFIED.

Emergency/First Aid Proc: INGEST: IF SWALLOWED & PERSON IS CONSCIOUS, IMMEDIATELY GIVE LARGE AMOUNTS OF WATER. GET MEDICAL ATTENTION.

INHALATION: IMMEDIATELY FLUSH W/PLENTY OF WATER FOR AT LEAST 15 MINUTES.

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Precautions for Safe Handling and Use
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Steps If Material Released/Spill: WEAR SUITABLE PROTECTIVE CLOTHING. CAREFULLY SWEEP UP & REMOVE.

Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.

Waste Disposal Method: DISPOSE I/A/W ALL APPLICABLE FEDERAL, STATE & LOCAL ENVIRONMENTAL REGULATIONS.

Precautions-Handling/Storing: KEEP CONTAINER TIGHTLY CLOSED. SUITABLE FOR ANY GENERAL CHEMICAL STORAGE AREA. DURING USE AVOID CONTACT W/EYES, SKIN, CLOTHING.

Other Precautions: NONE SPECIFIED BY MANUFACTURER.

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Control Measures
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Respiratory Protection: NONE REQUIRED WHERE ADEQUATE VENTILATION CONDITIONS EXIST. IF AIRBORNE CONCENTRATION IS HIGH, USE AN APPROPRIATE NIOSH/MSHA APPROVED RESPIRATOR OR DUST MASK.

Ventilation: USE ADEQUATE GENERAL OR LOCAL EXHAUST VENTILATION TO KEEP FUME OR DUST LEVELS AS LOW AS POSSIBLE.

Protective Gloves: IMPERVIOUS GLOVES (FP N).

Eye Protection: ANSI APPROVED CHEM WORKERS GOGGS (FP N).

Other Protective Equipment: LAB COAT.

Work Hygienic Practices: WASH THOROUGHLY AFTER HANDLING.

Suppl. Safety & Health Data: NONE SPECIFIED BY MANUFACTURER.

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Label Data
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Label Required: YES
Technical Review Date: 1/3/13
Label Status: G
Common Name: FERRIC AMMONIUM CITRATE, GREEN
Chronic Hazard: NO
Signal Word: CAUTION!
Acute Health Hazard-None: X
Contact Hazard-Slight: X
Fire Hazard-None: X
Reactivity Hazard-None: X
Special Hazard Precautions: ACUTE: SKIN CONTACT: PROLONGED CONTACT MAY CAUSE IRRITATION. CHRONIC: NONE LISTED BY MANUFACTURER.
Protect Eye: Y
Protect Skin: Y
Protect Respiratory: Y
Label Name: Green liquid
Label Emergency Number: 503-655-4152

FA-1 SENSITIZER CLEAR BOTTLE
MATERIAL SAFETY DATA SHEET
Trade Name: FA-1 SENSITIZER

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General Information
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Item Name: SILVER NITRATE SOLUTION (PART 2 OF 3-PART PACKAGE)
Company's Name: ROCKLAND COLLOID LLC
Company's P. O. Box: P.O. BOX 3120
Company's City: OREGON CITY
Company's State: OR
Company's Country: US
Company's Zip Code: 97045
Company's Emergency Ph #: 503-655-4152
Date MSDS Prepared: 01JAN96
Safety Data Review Date: 1/03/22
Unit Of Issue: 20 CC'S
Type of Container: PLASTIC BOTTLE

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Ingredients/Identity Information
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Proprietary: NO
Ingredient: SILVER NITRATE (SARA III)
Ingredient Sequence Number: 01
Percent: <40
NIOSH (RTECS) Number: VW4725000
CAS Number: 7761-88-8
OSHA PEL: 0.01 MG AG/M3
ACGIH TLV: 0.01 MG AG/M3; 9192
Proprietary: NO
Ingredient: DEMINERALIZED WATER
Ingredient Sequence Number: 03
Percent: TO 100
NIOSH (RTECS) Number: ZC0110000
CAS Number: 7732-18-5

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Physical/Chemical Characteristics
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Appearance and Odor: CLEAR & COLORLESS LIQUID, ODORLESS
Boiling Point: 171F/77.5C
Evaporation Rate and Ref: 1.59
Solubility in Water: MISCIBLE

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Fire and Explosion Hazard Data
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Flash Point: 102F/38.9C(CC)
Extinguishing Media: CO*2, FOAM, DRY CHEM.
Unusual Fire and Explosive Hazards: SILVER NITRATE & ALCOHOL MAY FORM
EXPLOSIVE FULMINATES
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Reactivity Data
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Stability: YES
Condition To Avoid (Stability): HEAT, SPARKS, FLAME, ULTRAVIOLET
LIGHT, REDUCING SUBSTANCES.
Hazardous Decomposition Products: SILVER, NO*X FUMES.
Hazardous Poly Occur: NO
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Health Hazard Data
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Signs/Symptoms of Overexposure: CORROSIVE TO EYES & SKIN, VERY TOXIC;
BURN, DIZZINESS, COMA, DEATH.
Emergency/First Aid Proc: SKIN: WASH W.SOAP & H*2O EYES: FLUSH W.
H*2O.
REMOVE TO FRESH AIR. GIVE CPR/OXYGEN IF NEED. KEEP WARM & QUIET.
REMOVE CONTAMINATED CLOTHING. IF UNCONS DO NOT TAKE ANYTHING BY MOUTH.
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Precautions for Safe Handling and Use
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Steps If Material Released/Spill: DISSOLVE OR MIX THE MATERIAL WITH A
COMBUSTIBLE SOLVENT AND BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH
AN AFTERBURNER AND SCRUBBER.
Waste Disposal Method: KEEP IN COVERED DRUMS, PENDING DISPOSAL. HANDLE
& DISPOSE IN FULL COMPLIANCE WITH ALL APPLICABLE INTERNATIONAL,
FEDERAL, STATE, & LOCAL REGULATIONS.
Precautions-Handling/Storing: WASH THOROUGHLY AFTER HANDLING. AVOID
CONTACT W/EYES, SKIN & CLOTHING. DO NOT BREATHE CHEMICALS. KEEP AWAY
FROM HEAT, SPARKS & OPEN FLAME.
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Control Measures
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Ventilation: GOOD VENTILATION.
Protective Gloves: DISPOSABLE
Eye Protection: SAFETY GLASSES
Other Protective Equipment: LAB COAT.
Suppl. Safety & Health Data: USED IN WATER TEST KIT NSN 6630-00-140-
7826
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Transportation Data
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Trans Data Review Date: 88053
DOT PSN Code: NBI
DOT Proper Shipping Name: SILVER NITRATE
DOT Class: 5.1
DOT ID Number: UN1493

DOT Pack Group: II
DOT Label: OXIDIZER
IMO PSN Code: NMD
IMO Proper Shipping Name: SILVER NITRATE
IMO Regulations Page Number: 5177
IMO UN Number: 1493
IMO UN Class: 5.1
IMO Subsidiary Risk Label: -
IATA PSN Code: WHU
IATA UN ID Number: 1493
IATA Proper Shipping Name: SILVER NITRATE
IATA UN Class: 5.1
IATA Label: OXIDIZER
AFI PSN Code: WHU
AFI Prop. Shipping Name: SILVER NITRATE
AFI Class: 5.1
AFI ID Number: UN1493
AFI Pack Group: II
AFI Label: OXIDIZER
AFI Basic Pac Ref: 9-10

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Label Data
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Label Required: YES
Label Status: F
Special Hazard Precautions: IF INHALED, MAY BE HARMFUL. CONTACT MAY CAUSE BURNS TO SKIN AND EYES. FIRE MAY PRODUCE IRRITATING OR POISONOUS GASES. RUNOFF FROM FIRE CONTROL OR DILUTION WATER MAY CAUSE POLLUTION.
Label Name: Silver Nitrate.
Label Emergency Number: 914-413-3000

FA-1 SENSITIZER LARGE BOTTLE
MATERIAL SAFETY DATA SHEET
Trade Name: FA-1 SENSITIZER

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General Information
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Item Name: SODIUM THIOSULFATE SOLUTION (PART 3 OF 3-PART PACKAGE)
Company's Name: ROCKLAND COLLOID LLC
Company's P. O. Box: 3120
Company's City: OREGON CITY
Company's State: OR
Company's Country: US
Company's Zip Code: 97045
Company's Emerg Ph #: 503-655-4152
Date MSDS Prepared: 01JAN96
Safety Data Review Date: 01/03/22
Unit Of Issue: 120 CC'S
Unit Of Issue Container Qty: 120 CC'S

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Ingredients/Identity Information
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Proprietary: NO
Ingredient: SODIUM THIOSULFATE
Ingredient Sequence Number: 01
Percent: 20
NIOSH (RTECS) Number: XN6476000
CAS Number: 7772-98-7
Proprietary: NO

Ingredient: WATER
Ingredient Sequence Number: 02
Percent: 80
NIOSH (RTECS) Number: ZC0110000
CAS Number: 7732-18-5

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Physical/Chemical Characteristics
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Appearance And Odor: WHITE ODORLESS CRYSTALS DISSOLVED IN WATER.
Boiling Point: >212F
Specific Gravity: 1.729
Evaporation Rate And Ref: N/A
Solubility In Water: COMPLETE
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Fire and Explosion Hazard Data
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Flash Point: N/A
Extinguishing Media: NONE
Special Fire Fighting Proc: NONE
Unusual Fire And Explosive Hazards: NONE

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Reactivity Data
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Stability: YES
Hazardous Poly Occur: NO
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Health Hazard Data
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Signs/Symptoms Of Overexposure: LARGE DOSES OF SOLID INGESTED ACTS AS
CATHARTIC.EYE/SKIN CONTACT: IRRITANT
Emergency/First Aid Proc: EYE/SKIN: FLUSH WITH COPIOUS AMOUNTS OF
WATER. CALL PHYSICIAN IF EYE CONTACT.
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Precautions for Safe Handling and Use
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Steps If Material Released/Spill: ABSORB WITH APPROPRIATE MATERIAL AND
PLACE IN APPROVED CONTAINER.
Waste Disposal Method: DISPOSE OF ABSORB MATERIAL AS SOLID WASTE IN
ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.
Precautions-Handling/Storing: NONE
Other Precautions: NONE
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Control Measures
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Respiratory Protection: NONE REQUIRED.
Ventilation: AS NEEDED.
Protective Gloves: RECOMMENDED
Eye Protection: SAFETY GLASSES.
Other Protective Equipment: AS NEEDED.
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Transportation Data
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Trans Data Review Date: 81070
DOT PSN Code: ZZZ
DOT Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION
IMO PSN Code: ZZZ
IMO Proper Shipping Name: NOT REGULATED FOR THIS MODE OF RANSPORTATION
IATA PSN Code: ZZZ

IATA Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION
AFI PSN Code: ZZZ
AFI Prop. Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION
Additional Trans Data: ITEM IS NOT REGULATED FOR TRANSPORTATION

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Disposal Data
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Disposal Data Review Date: 89207
Rec # For This Disposal Entry: 01
Tot Disposal Entries Per NSN: 002
Landfill Ban Item: YES
Disposal Supplemental Data: IN CASE OF ACCIDENTAL EXPOSURE OR
DISCHARGE, CONSULT HEALTH AND SAFETY FILE FOR PRECAUTIONS.
1st EPA Hazard Waste Name New: NOT REGULATED
1st EPA Hazard Waste Char New: NOT REGULATED BY RCRA
1st EPA Acute Hazard New: NO

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Label Data
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Label Required: YES
Label Status: G
Common Name: SODIUM THIOSULFATE, SOLUTION REAGENT
Special Hazard Precautions: LARGE DOSES OF SOLID INGESTED ACTS AS
CATHARTIC.EYE/SKIN CONTACT: IRRITANT
Label Name: FIXER