

Safety Data Sheet

Sudan IV Staining Solution (Herxheimer II)

Section 1 - Chemical Product and Company Identification

SDS Name: Sudan IV Staining Solution (Herxheimer II)

Catalog Numbers: SO-923, H-500-1

Company Identification: Transene Company, Inc., DBA ROWLEY BIOCHEMICAL, Inc.
10 ELECTRONICS AVENUE
DANVERS, MA 01923

For information, call: 978-739-4883

Emergency Number: 800-424-9300

For CHEMTREC assistance, call: 800-424-9300

Section 2 - Hazards Identification

GHS Classifications

H225-Flammable liquids: 2

H303-Acute toxicity, oral: 5

H316-Skin corrosion/irritation: 3

H317-Sensitisation, skin: 1A

H319-Serious eye damage/eye irritation: 2A

H336-Specific target organ toxicity, single exposure; Narcotic effects: 3

H370-Specific target organ toxicity, single exposure: 1

H372-Specific target organ toxicity, repeated exposure: 1

Pictograms or Hazard symbols and Hazard statement(s):



Signal Word: Danger

Hazard Statements:

H225-Highly flammable liquid and vapour
H303-May be harmful if swallowed
H316-Causes mild skin irritation
H317-May cause an allergic skin reaction
H319-Causes serious eye irritation
H336-May cause drowsiness or dizziness
H370-Causes damage to organs (target organs: respiratory system, central nervous system, and optic nerve)
H372-Causes damage to organs through prolonged or repeated exposure (target organs: kidney, liver, spleen and blood)

Precautionary Statements:

P210-Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.
P233-Keep container tightly closed.
P240-Ground and bond container and receiving equipment.
P241-Use explosion-proof electrical/ventilating/lighting equipment.
P242-Use non-sparking tools.
P243-Take action to prevent static discharges.
P260-Do not breathe dust/fume/gas/mist/vapours/spray.
P261-Avoid breathing dust/fume/gas/mist/vapours/spray.
P264-Wash thoroughly after handling.
P270-Do not eat, drink, or smoke when using this product.
P271-Use only outdoors or in a well-ventilated area.
P272-Contaminated work clothing should not be allowed out of the workplace.
P280-Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312-If swallowed: Call a Poison Center/doctor if you feel unwell.
P302+P352-If on skin: Wash with plenty of soap and water.
P303+P361+P353-If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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.
P308+P311-If exposed or concerned: Call a Poison Center/doctor.
P312-Call a Poison Center/doctor if you feel unwell.
P314-Get medical advice/attention if you feel unwell.
P332+P313-If skin irritation occurs: Get medical advice/attention.
P333+P313-If skin irritation or rash occurs: Get medical advice/attention.
P337+P313-If eye irritation persists: Get medical advice/attention.
P362+P364-Take off contaminated clothing and wash it before reuse.
P370+P378-In case of fire: Use dry chemical, carbon dioxide, dry sand, water spray or alcohol-resistant foam to extinguish.
P403+P235-Store in a well-ventilated place. Keep cool.
P403+P233-Store in a well-ventilated place. Keep container tightly closed.
P405-Store locked up.
P501-Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 3 - Composition, Information on Ingredients

| CAS# | Chemical Name | Percent |
|-----------|----------------|----------|
| 85-83-6 | Sudan IV | 0.10 w/v |
| 67-64-1 | Acetone | 50 v/v |
| 64-17-5 | Ethyl alcohol | 33 v/v |
| 67-56-1 | Methyl alcohol | 1.8 v/v |
| 7732-18-5 | Water | Balance |

Section 4 - First Aid Measures

Eye Exposure: In case of contact with eyes, rinse eyes with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Seek immediate medical attention.

Dermal Exposure: In case of contact with skin, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Seek medical attention.

Oral Exposure: If swallowed, seek immediate medical advice. Do not induce vomiting. Rinse mouth with water.

Inhalation Exposure: If inhaled, remove to fresh air. If not breathing, give artificial respiration. Seek immediate medical attention.

Section 5 - Fire Fighting Measures

General Information: Containers can build up pressure if exposed to heat and/or fire. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Flammable Liquid. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire.

Extinguishing Media: For small fires, use dry chemical, carbon dioxide, dry sand, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water.

Hazardous Combustion Products: Carbon oxides, nitrogen oxides, formaldehyde, methanol, irritating and toxic fumes and gases.

Flash Point: Not available

Autoignition Temperature: Not available

Explosion Limits, Lower: Not available

Upper: Not available

NFPA Rating: (estimated) Health: 2; Flammability: 4; Instability: 0

Note: Static discharge could act as an ignition source.

Section 6 - Accidental Release Measures

Procedure(s) of Personal Precaution(s):

Wear personal protective equipment. Do not ingest or inhale. Do not get on skin or clothing. Do not get in eyes. Ensure adequate ventilation. Keep away from heat. Eliminate all sources of ignition. Take precautionary measures against static discharge.

Methods for Cleaning up: Absorb with inert material such as sand, earth, or vermiculite. Do NOT absorb with combustible material such as saw dust or cellulosic material. Carefully sweep up and containerize for proper disposal. Eliminate all sources of ignition. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges. Do not release to the environment. Do not release to drains.

Section 7 - Handling and Storage

Use care when handling. Wear personal protective equipment. Wash thoroughly after handling. Ensure adequate ventilation. Avoid contact with eyes, skin, or clothing. Avoid ingestion and inhalation. Keep in a tightly closed and non-metal container. Store in a cool, dry, and well-ventilated area. Protect from heat. Protect from direct sunlight. Use only non-sparking tools. Use explosion-proof electrical/ventilating/lighting equipment. Use proper grounding procedures to avoid static electricity. Keep away from incompatible materials. Vapors heavier than air, may travel considerable distance and ignite or explode.

Note: Static discharge could act as an ignition source.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

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 EN166.

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.

Exposure Limits:

| Chemical Name | ACGIH - TLV | NIOSH - IDLH | OSHA - Final PELs |
|-------------------------------|----------------------------------|--|--------------------------------|
| Sudan IV CAS#85-83-6 | Not listed | Not listed | Not listed |
| Acetone CAS#67-64-1 | 250 ppm TWA 500 ppm STEL | 250 ppm TWA 590 mg/m3 TWA 2500 ppm IDLH | 1000 ppm TWA 2400 mg/m3 TWA |
| Ethyl Alcohol CAS#64-17-5 | 1000 ppm STEL | 1000 ppm TWA 1900 mg/m3 TWA 3300 ppm IDLH | 1000 ppm TWA 1900 mg/m3 TWA |
| Methyl Alcohol CAS#67-56-1 | 200 ppm TWA 250 ppm Skin STEL | 20 ppm TWA 260 mg/m3 TWA 250 ppm STEL 325 mg/m3 STEL 6000 ppm IDLH | 200 ppm TWA 260 mg/m3 TWA |

OSHA Vacated PELs: Acetone: 750 ppm TWA; 1800 mg/m3 TWA; 2400 mg/m3 STEL; 1000ppm STEL

Ethyl Alcohol: 1000 ppm TWA; 1900 mg/m3 TWA

Methyl Alcohol: 200 ppm TWA; 260 mg/m3 TWA; 250 ppm STEL; 325 mg/m3 Skin STEL

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| Section 9 - Physical and Chemical Properties |
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Physical State: Liquid

Appearance: Dark red-brown

Odor: Alcohol-like

Vapor Pressure: Not available

Odor Threshold: Not available

Vapor Density: Not available

pH: Not available

Relative Density: Not available

Melting point/freezing point: Not available

Solubility: Not available

Boiling Point: Not available

Flash Point: Not available

Evaporation Rate: Not available

Flammability (solid, gas): Not available

Partition coefficient: n-octanol/water: Not available

Autoignition Temperature: Not available

Decomposition Temperature: Not available

Viscosity: Not available

Specific Gravity/Density: Not available

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. Reacts violently with oxidizers: Risk of fire/explosion.

Conditions to Avoid: Direct sunlight and extremely high or low temperatures. Avoid incompatible materials, ignition sources, and excess heat.

Incompatibilities with Other Materials: Strong oxidizing agents, strong reducing agents, strong bases, ammonia, acids, alkali metals, ammonia, peroxides, halogenated compounds, amines, rubber, various plastics, phosphorous oxychloride, hydrazine, peroxides, sodium, acid anhydrides, calcium hypochlorite, chromyl chloride, nitrosyl perchlorate, bromine pentafluoride, perchloric acid, silver nitrate, mercuric nitrate, potassium-tert-butoxide, magnesium perchlorate, acid chlorides, platinum, uranium hexafluoride, silver oxide, iodine heptafluoride, acetyl bromide, disulfuryl difluoride, tetrachlorosilane + water, acetyl chloride, permanganic acid, ruthenium (VIII) oxide, uranyl perchlorate, and potassium dioxide.

Hazardous Decomposition Products: Carbon oxides, nitrogen oxides, formaldehyde, methanol, irritating and toxic fumes and gases.

Note: Static discharge could act as an ignition source.

Section 11 - Toxicological Information

CAS#85-83-6 Sudan IV: RTECS#: QL5775000

LD50 Oral: Not available

LD50 Dermal: Not available

LC50 Inhalation: Not available

Equivocal tumorigenic agent by RTECS criteria.

Carcinogenicity: Sudan IV CAS#85-83-6 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop. 65.

Germ cell mutagenicity: Histidine reversion (Ames), hamster embryo, morphological transformation.

CAS#67-64-1 Acetone: RTECS#: AL3150000

LD50 Oral: 5800 mg/kg (rat)

LD50 Dermal: >15800 mg/kg (rabbit)

LC50 Inhalation: 76 mg/L 4h vapor (rat)

Carcinogenicity: Acetone CAS#67-64-1 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop. 65.

CAS#64-17-5 Ethyl Alcohol: RTECS#: KQ6300000

LD50 Oral: 10470 mg/kg (rat)

LD50 Dermal: Not available

LC50 Inhalation: 124.7 mg/L 4h (rat)

Draize test, rabbit, eye: 500 mg/24h Mild Irritant.
Skin: Repeated exposure may cause skin dryness or cracking.
Ethyl Alcohol overexposure may lead to headache, dizziness, tiredness, nausea, and vomiting.

Carcinogenicity: Ethyl Alcohol CAS#64-17-5 is not listed by OSHA. Ethyl Alcohol is listed by IARC (Group 1, Carcinogenic to Humans), NTP (Known Carcinogen), and ACGIH (A3, Animal Carcinogen). Ethyl Alcohol is listed by California Prop. 65 as a developmental carcinogen (alcoholic beverages only).

CAS#67-56-1 Methyl Alcohol: RTECS#: PC1400000

LD50 Oral: 100.1 mg/kg (expert judgement)
LD50 Dermal: 300.1 mg/kg (expert judgement)
LC50 Inhalation: 3.1 mg/L 4h vapor (expert judgement)

Investigated as a mutagen, reproductive effector.

Draize test, rabbit, eye: 100 mg/24h Moderate Irritant.
Draize test, rabbit, skin: 20 mg/24h Moderate Irritant.

Carcinogenicity: Methyl Alcohol CAS#67-56-1 is not listed by IARC, NTP, ACGIH, or OSHA. Methyl Alcohol is listed by California Prop. 65 as a developmental carcinogen.

Information on the likely routes of exposure: Routes of entry anticipated: oral, dermal, inhalation, and eye.

Epidemiology: Not available.

Teratogenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects: Not available.

Neurotoxicity: Not available.

Mutagenicity: Histidine reversion (Ames), hamster embryo, morphological transformation (Sudan IV).

Specific Target Organ Toxicity, Single Exposure: Respiratory system, central nervous system, and optic nerve.

Specific Target Organ Toxicity, Repeated Exposure: Kidney, liver, spleen, and blood.

Symptoms associated with exposure: Overexposure may cause headache, salivation, nausea, vomiting, diarrhea, tiredness, and dizziness. May cause pulmonary edema. Causes serious eye irritation. Eye contact may result in corneal damage, blindness, pain, irritation, watering, redness, blurred or double vision. May cause an allergic skin reaction. May cause dermatitis, skin irritation and cracking. May cause kidney and stomach irregularities. Causes damage to organs if in contact with skin, if inhaled, or if swallowed.

The toxicological properties of this material have not been thoroughly investigated.

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| Section 12 - Ecological Information |
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Ecotoxicity: Do not release to the environment. Do not release to drains. Toxic to aquatic

life.

CAS#67-64-1 Acetone:

LC50, freshwater fish: 5540 mg/L 96h (oncorhynchus mykiss)(rainbow trout)

LC50, freshwater fish: 11000 mg/L 96h (albumus alburnus)

LC50, freshwater fish: 11300 mg/L 96h (leuciscus idus)(golden orfe)

LC50, freshwater fish: 6100 mg/L 24h (salmo gairdneri)

EC50, water flea: 8800 mg/L 48h (daphnia magna)

CAS#64-17-5 Ethyl Alcohol:

LC50, freshwater fish: 14200 mg/L 96h (pimephales promelas)(fathead minnow)

EC50, freshwater algae: 275 mg/L 72h (chlorella vulgaris)

EC50, water flea: 9268 mg/L 48 h

EC50, water flea: 10800 mg/L 24h

IC50, bacteria: >1000 mg/L 3h (activated sludge)

EC50, microtox: 34634 mg/L 30min (photobacterium phosphoreum)

EC50, microtox: 35470 mg/L 5min (photobacterium phosphoreum)

CAS#67-56-1 Methyl Alcohol:

LC50, freshwater fish: 15400 mg/L 96h flow-through (lepomis macrochirus)(bluegill)

LC50, freshwater fish: 19000 mg/L 96h (oncorhynchus mykiss)(rainbow trout)

EC50, water flea: 18260 mg/L 96h semi-static (daphnia magna)

ErC50, algae: 22000 mg/L 96h static (pseudokirchneriella subcapitata)(green algae)

IC50, bacteria: >1000 mg/L 3h static (activated sludge)

Persistence and degradability: Not available.

Bio-accumulative potential: Not available.

Mobility in Soil: Will likely be mobile in the environment due to its volatility.

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| Section 13 - Disposal Considerations |
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DISPOSAL: Dispose of in accordance with all federal, state, and local regulations.

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| Section 14 – Transport Information |
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DOT

Proper shipping name: Flammable Liquids, N.O.S. (Acetone & SD Alcohol)

UN1993

PG II

Hazard class 3 (flammable)

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| Section 15 - Regulatory Information |
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Canada Regulatory Information

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the SDS contains all the information required by the CPR.

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| Section 16 - Additional Information |
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SDS Creation Date: 6-7-21

Revision #1: 3-4-24

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