

Safety Data Sheet

Differentiating Solution

Section 1 - Chemical Product and Company Identification

SDS Name: Differentiating Solution

Catalog Numbers: SO-111, L-777-2, O-930-2

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

H313-Acute toxicity, dermal: 5

H319-Serious eye damage/eye irritation: 2A

H332-Acute toxicity, inhalation: 4

H335-Specific target organ toxicity, single exposure; Respiratory tract irritation: 3

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

24% of the mixture consists of ingredients of unknown acute dermal toxicity.

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
H313-May be harmful in contact with skin.
H319-Causes serious eye irritation
H332-Harmful if inhaled
H335-May cause respiratory 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.
P280-Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312-If swallowed: Call a Poison Center/doctor if you feel unwell.
P302+P312-If on skin: Call a Poison Center/doctor if you feel unwell.
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.
P337+P313-If eye irritation persists: Get medical advice/attention.
P370+P378-In case of fire: Use dry chemical, carbon dioxide, dry sand, water spray or alcohol-resistant foam to extinguish.
P403+P233-Store in a well-ventilated place. Keep container tightly closed.
P403+P235-Store in a well-ventilated place. Keep cool.
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 |
|---------|--------------------|---------|
| 64-17-5 | Ethyl Alcohol | 24 v/v |
| 67-56-1 | Methyl Alcohol | 1 v/v |
| 75-65-0 | tert-Butyl Alcohol | 75 v/v |

Section 4 - First Aid Measures

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

Dermal Exposure: In case of skin contact, 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.

Inhalation Exposure: If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

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, formaldehyde, 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. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharge. 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. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Keep in a tightly closed and non-metal container. Store in a cool, dry, well-ventilated area. Keep away from incompatible materials. Protect from heat. Keep away from open flames, hot surfaces, and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metals parts of the equipment must be grounded. Use explosion-proof electrical/ventilating/lighting equipment. Take precautionary measures against static discharges. 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 |
|-----------------------------------|----------------------------------|---|--|
| Ethyl Alcohol CAS#64-17-5 | 1000 ppm STEL | 1000 ppm TWA 1900 mg/m ³ TWA 3300 ppm IDLH | 1000 ppm TWA 1900 mg/m ³ TWA |
| Methyl Alcohol CAS#67-56-1 | 200 ppm TWA 250 ppm Skin STEL | 200 ppm TWA 260 mg/m ³ TWA 250 ppm STEL 325 mg/m ³ STEL 6000 ppm IDLH | 200 ppm TWA 260 mg/m ³ TWA |
| tert-Butyl Alcohol CAS#75-65-0 | 100 ppm TWA | 100 ppm TWA 300 mg/m ³ TWA 150 ppm STEL 450 mg/m ³ STEL 1600 ppm IDLH | 100 ppm TWA 300 mg/m ³ TWA |

OSHA Vacated PELs: 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
tert-Butyl Alcohol: 100 ppm TWA, 300 mg/m³ TWA, 150 ppm STEL,
450 mg/m³ STEL

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| Section 9 - Physical and Chemical Properties |
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Physical State: Liquid
Appearance: Clear, colorless
Odor: Alcohol-like
Vapor Pressure: Not available
Odor Threshold: Not available
Vapor Density: Not available
pH: 5.4-7.4
Relative Density: Not available
Melting point/freezing point: Not available
Solubility: Soluble in water
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

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| Section 10 - Stability and Reactivity |
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Chemical Stability: Stable under normal temperatures and pressures. Reacts violently with oxidizers: Risk of fire/explosion. May form explosive peroxides when concentrated (distilled, evaporated, or otherwise concentrated).

Conditions to Avoid: Avoid direct sunlight and extremely high or low temperatures. Avoid all possible sources of ignition (spark or flame). Keep away from hot surfaces and avoid incompatible materials. Avoid concentration (distillation, evaporation, or otherwise concentration).

Incompatibilities with Other Materials: Strong oxidizing agents, acids, alkali metals, ammonia, 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, potassium dioxide, rubber, and various plastics.

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

Section 11 - Toxicological Information

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.

CAS#75-65-0 tert-Butyl Alcohol: RTECS#: EO1925000

LD50 Oral: >3100 mg/kg (rat)

LD50 Dermal: >2000 mg/kg (rabbit)

LC50 Inhalation: 11.1 mg/L 4h vapor (expert judgement)

Carcinogenicity: tert-Butyl Alcohol CAS#75-65-0 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop. 65.

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: Not available.

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

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

Symptoms associated with exposure: Inhalation of high vapor concentrations may cause symptoms such as headache, dizziness, tiredness, nausea, and vomiting. Eye contact may result in corneal damage, blindness, pain, irritation, watering, redness, blurred or double vision. Skin contact may cause dryness, cracking, irritation. Causes damage to organs if inhaled or 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 with long lasting effects. May cause long-term adverse effects to the environment.

CAS# 64-17-5 Ethyl Alcohol:

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

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

EC50, water flea: 9268 mg/L 48h

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 96 semi-static (daphnia magna)

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

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

CAS#75-65-0 tert-Butyl Alcohol:

LC50, freshwater fish: >961 mg/L 96h flow-through (pimephales promelas)(fathead minnow)

IC50, algae: >1000 mg/L 72h (desmodesmus subspicatus)(green algae)

EC50, water flea: 933 mg/L 48h static (daphnia magna)

Persistence and degradability: Not available.

Bio-accumulative potential: Not available.

Mobility: Will likely be mobile in the environment due to its water solubility and volatility.

Section 13 - Disposal Considerations

DISPOSAL: Dispose of in accordance with all federal, state, and local regulations.

Section 14 – Transport Information

DOT

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

UN1993

PG II

Hazard class 3 (flammable)

Section 15 - Regulatory Information

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.

Section 16 - Additional Information

SDS Creation Date: 10/21/12

Revision #1: 9/30/14 YM

Revision #2: 1-5-22

Revision #3: 5-8-24

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