

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

H301-Acute toxicity, oral: 3

H319-Serious eye damage/eye irritation: 2A

H332-Acute toxicity, inhalation: 4

H335/H336-Specific target organ toxicity, single exposure; Respiratory system, Central nervous system: 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
H301-Toxic if swallowed
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, optic nerve).
H372-Causes damage to organs through prolonged or repeated exposure (target organs: kidney, liver, blood).

Precautionary Statements:

P210-Keep away from heat/sparks/open flames/hot surfaces.-No smoking.
P233-Keep container tightly closed.
P240-Ground/bond container and receiving equipment.
P241-Use explosion-proof electrical/ventilating/lighting/equipment.
P242-Use only non-sparking tools.
P243-Take precautionary measures against static discharge.
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/eye protection/face protection.
P301+P310-If swallowed: Immediately call a Poison Center or doctor/physician.
P303+P361+P353-If on skin (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340-If inhaled: Remove victim to fresh air and keep at rest in a position 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.
P307+P311-If exposed: Call a Poison Center or doctor/physician.
P312-Call a Poison Center or doctor/physician if you feel unwell.
P314-Get medical advice/attention if you feel unwell.
P330-Rinse mouth.
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. Call a physician.

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, irritating 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: 3; 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 discharges.

Methods for Cleaning up: Absorb with sand, earth, or vermiculite. Carefully sweep up and containerize for proper disposal. Use spark-proof tools and explosion-proof equipment. 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. Store in a cool, dry, well-ventilated area. Keep in a tightly closed and non-metal container. 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. 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	NIOSH	OSHA - Final PELs
Ethanol CAS#64-17-5	1000 ppm STEL	1000 ppm TWA 1900 mg/m3 TWA 3300 ppm IDLH	1000 ppm TWA 1900 mg/m3 TWA

Methanol CAS#67-56-1	200 ppm TWA 250 ppm STEL	200 ppm TWA 260 mg/m3 TWA 250 ppm STEL 325 mg/m3 STEL 6000 ppm IDLH	200 ppm TWA 260 mg/m3 TWA 250 ppm STEL 325 mg/m3 STEL
tert-Butyl Alcohol CAS#75-65-0	100 ppm TWA	100 ppm TWA 300 mg/m3 TWA 150 ppm STEL 450 mg/m3 STEL 1600 ppm IDLH	100 ppm TWA 300 mg/m3 TWA

OSHA Vacated PELs: Ethanol: 1000 ppm TWA; 1900 mg/m3 TWA
Methanol: 200 ppm TWA; 260 mg/m3 TWA; 250 ppm STEL; 325 mg/m3 STEL
tert-Butyl Alcohol: 100 ppm TWA, 300 mg/m3 TWA, 150 ppm STEL, 450 mg/m3 STEL

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: Clear
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
Auto-ignition temperature: Not available
Decomposition temperature: Not available
Viscosity: Not available
Specific Gravity/Density: Not available

NOTE: Static discharge could act as an ignition source.

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. Extremely high or low temperatures. Open flame. Incompatible materials, ignition sources, excess heat, and oxidizers.
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.

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

Section 11 - Toxicological Information
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CAS#64-17-5 Ethyl Alcohol: RTECS#: KQ6300000

LD50 Oral: 7060 mg/kg (rat)

LD50 Dermal: Not available

LC50 Inhalation: 20000 ppm (rat) 10h

Draize test, rabbit, eye: 500 mg Severe.

Draize test, rabbit, eye: 500 mg/24H Mild.

Draize test, rabbit, skin: 20 mg/24H Moderate.

Carcinogenicity: Ethyl Alcohol CAS#64-17-5 is listed by the IARC (Group 1, Carcinogenic to Humans), the NTP, and the ACGIH (A3, Animal Carcinogen). Ethyl Alcohol is listed by California Prop. 65 as a developmental carcinogen (alcoholic beverages).

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

LD50 Oral: 6200 mg/kg (rat)

LD50 Dermal: 15800 mg/kg (rabbit)

LC50 Inhalation: 64000 ppm (rat) 4h

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

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

LD50 Oral: >3100 mg/kg (rat)

LD50 Dermal: >2000 mg/kg (rabbit)

LC50 Inhalation: >31 mg/L (rat) 4h

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

Epidemiology: Ethanol has been shown to produce fetotoxicity in the embryo or fetus of laboratory animals. Prenatal exposure to ethanol is associated with a distinct pattern of congenital malformations that have collectively been termed the "fetal alcohol syndrome".

Teratogenicity: Oral, Human - woman: TDLo = 41 gm/kg (female 41 week(s) after conception) Effects on Newborn - Apgar score (human only) and Effects on Newborn - other neonatal measures or effects and Effects on Newborn - drug dependence.

Reproductive Effects: Intrauterine, Human - woman: TDLo = 200 mg/kg (female 5 day(s) pre-mating) Fertility - female fertility index (e.g. # females pregnant per # sperm positive females; # females pregnant per # females mated).

Neurotoxicity: Not available.

Mutagenicity: DNA Inhibition: Human, Lymphocyte = 220 mmol/L.; Cytogenetic Analysis: Human, Lymphocyte = 1160 gm/L.; Cytogenetic Analysis: Human, Fibroblast = 12000 ppm.; Cytogenetic Analysis: Human, Leukocyte = 1 pph/72H (Continuous).; Sister Chromatid Exchange: Human, Lymphocyte = 500 ppm/72H (Continuous).

Other Studies: Standard Draize Test(Skin, rabbit) = 20 mg/24H (Moderate) Standard Draize Test: Administration into the eye (rabbit) = 500 mg (Severe).

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

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

Note: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

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

Section 12 - Ecological Information

Ecotoxicity: Do not release to the environment. Do not release to drains. Toxic to aquatic life with long lasting effects.

CAS# 64-17-5 Ethyl Alcohol:

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

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

EC50, water flea: 9268 mg/L 48h, 10800 mg/L 24h

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: >10000 mg/L (pimephales promelas)(fathead minnow) 96h

EC50, water flea: >10000mg/L 24 h

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

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

EC50, microtox: =39000 mg/L 25min

EC50, microtox: =40000 mg/L 15min

EC50, microtox: =43000 mg/L 5min

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

EC50, freshwater algae: 1000 mg/L 72h

LC50, freshwater fish: >961 mg/L (pimephales promelas) 96h

EC50, water flea: 933 mg/L 48h

EC50, microtox: >10000 mg/L 17h

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: Alcohols, N.O.S.

UN1987

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 #2.** 1-5-22

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