

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Ethanol(95)

Other means of identification

Product Code 059-00477,051-00476

UN/ID No UN1170

Recommended use of the chemical and restrictions on use

Recommended Use No information available.

Uses advised against No information available

Details of the supplier of the safety data sheet

Distributor

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2. HAZARDS IDENTIFICATION

GHS classification

Classification of the substance or mixture

Flammable liquids

Category 2

Serious eye damage/eye irritation

Category 2B

Carcinogenicity

Category 1A

Reproductive Toxicity

Category 1A

Specific target organ toxicity (single exposure)

Category 3

Category 3 Respiratory tract irritation, Narcotic effects

Specific target organ toxicity (repeated exposure)

Category 1, Category 2

Category 1 liver

Category 2 central nervous system

Pictograms



Signal word

Danger

Hazard statements

H225 - Highly flammable liquid and vapor

H320 - Causes eye irritation

H350 - May cause cancer

H360 - May damage fertility or the unborn child

H335 - May cause respiratory irritation

H336 - May cause drowsiness or dizziness

H372 - Causes damage to the following organs through prolonged or repeated exposure: liver

H373 - May cause damage to the following organs through prolonged or repeated exposure: central nervous system

Precautionary statements-(Prevention)

- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Use personal protective equipment as required.
- Wash face, hands and any exposed skin thoroughly after handling
- Do not breathe dust/fume/gas/mist/vapors/spray
- Do not eat, drink or smoke when using this product
- Use only outdoors or in a well-ventilated area
- Keep away from heat/sparks/open flames/hot surfaces. — No smoking
- Keep container tightly closed
- Ground/bond container and receiving equipment
- Use explosion-proof electrical/ventilating/lighting/equipment
- Use only non-sparking tools
- Take precautionary measures against static discharge
- Keep cool

Precautionary statements-(Response)

- IF exposed or concerned: Get medical advice/attention
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- If eye irritation persists: Get medical advice/attention.
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- In case of fire: Use CO₂, dry chemical, or foam for extinction

Precautionary statements-(Storage)

- Store locked up.
- Store in a well-ventilated place. Keep container tightly closed

Precautionary statements-(Disposal)

- Dispose of contents/container to an approved waste disposal plant

Others

Other hazards Not available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Single Substance or Mixture Substance

Formula C₂H₅OH

Chemical Name	Molecular weight	CAS No.	Weight-%
Ethanol	46.07	64-17-5	94.8-95.8 vol%

Impurities and/or Additives : Not applicable

4. FIRST AID MEASURES

First aid measures

Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.
Inhalation	Remove to fresh air.
Ingestion	Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.
Self-protection of the first aider	Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing media

Dry chemical, CO₂, water spray or alcohol-resistant foam. Water spray (fog).

Unsuitable Extinguishing media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

Extremely flammable.

Explosion data

Sensitivity to Mechanical Impact none.

Sensitivity to Static Discharge none.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions, protective equipment and emergency procedures For indoor, provide adequate ventilation process until the end of working. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipments to avoid adhering it on skin, or inhaling the gas. Work from windward, and retract the people downwind.

Environmental precautions

Environmental precautions To be careful not discharged to the environment without being properly handled waste water contaminated. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods and material for containment and cleaning up Absorb dry sand, earth, sawdust and the waste. Collect empty container that can be sealed.

Methods for cleaning up Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical measures Highly flammable. Avoid contact with high temperature objects, spark, and strong oxidizing agents.

Protective measures Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage conditions Store away from sunlight in well-ventilated place at room temperature (preferably cool). Keep container tightly closed.

Packaging materials Glass. Iron.

Incompatible materials Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

Exposure limits

Chemical Name	ACGIH	OSHA PEL	NIOSH IDLH
Ethanol 64-17-5	STEL: 1000 ppm	TWA: 1000 ppm TWA: 1900 mg/m ³ (vacated) TWA: 1000 ppm (vacated) TWA: 1900 mg/m ³	IDLH: 3300 ppm TWA: 1000 ppm TWA: 1900 mg/m ³

Personal protective equipment

Respiratory protection gas mask for organic gas

Hand protection Protection gloves

Eye protection protective eyeglasses or chemical safety goggles

Skin and body protection Wear suitable protective clothing, protective boots

General hygiene considerations

When using do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form

Color colorless

Turbidity clear

Appearance liquid

Odor

characteristic odor

pH

No data available

Melting point/freezing point

-130 °C

Boiling point, initial boiling point and boiling range

78 °C

Flash point

13 °C

Evaporation rate:

No data available

Flammability (solid, gas):

No data available

Upper/lower flammability or explosive limits

Upper :

19.0 vol%

Lower :

3.3 vol%

Vapour pressure

5.33 kPa

Vapour density

1.6 (air = 1)

Specific Gravity / Relative density

0.808-0.812

Solubilities

water , Diethyl ether : soluble .

n-Octanol/water partition coefficient:(log Pow)

-0.32

Auto-ignition temperature:

371 °C

Decomposition temperature:

No data available

Viscosity (coefficient of viscosity)

No data available

Dynamic viscosity

No data available

10. STABILITY AND REACTIVITY

Stability

Stability

Stable under recommended storage conditions.

Reactivity No data available

Hazardous reactions

May cause ignition on contact with strong oxidizing agents

Conditions to avoid

Extremes of temperature and direct sunlight, Heat, flames and sparks

Incompatible materials

Strong oxidizing agents

Hazardous decomposition products

Carbon monoxide (CO), carbon dioxide (CO₂)

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Ethanol	6020mg/kg(Rat)	N/A	20000ppm/10H(Rat)

Chemical Name	Acute toxicity -oral- source information	Acute toxicity -dermal- source information	Acute toxicity -inhalation gas- source information
Ethanol	LD50(Rat) : 6,200 mg/kg, 11,500 mg/kg, 17,800 mg/kg, 13,700 mg/kg(PATTY(6th, 2012)), 15,010 mg/kg, 7,000-11,000 mg/kg(SIDS(2005))	LDLo(Rabbit) = 20,000 mg/kg(SIDS(2005))	Based on the NITE GHS classification results.

Chemical Name	Acute toxicity -inhalation vapor- source information	Acute toxicity -inhalation dust- source information	Acute toxicity -inhalation mist- source information
Ethanol	LC50(Rat) = 63,000 ppmV (DFGOT vol.12 (1999)), 66,280 ppmV(124.7 mg/L) (SIDS (2005))	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Skin irritation/corrosion

Chemical Name	Skin corrosion irritation source information
Ethanol	Based on the NITE GHS classification results.

Serious eye damage/ irritation

Chemical Name	Serious eye damage source information
Ethanol	Based on the NITE GHS classification results.

Respiratory or skin sensitization

Chemical Name	Respiratory, Skin sensitization source information
Ethanol	Based on the NITE GHS classification results.

Reproductive cell mutagenicity

Chemical Name	Mutagenic source information
Ethanol	Based on the NITE GHS classification results.

Carcinogenicity

Chemical Name	Carcinogenicity source information
Ethanol	A3 (ACGIH (7th, 2012))

Chemical Name	NTP	IARC	ACGIH	JSOH (Japan)
Ethanol 64-17-5	Known	Group 1	A3	-

Reproductive toxicity

Chemical Name	Reproductive toxicity source information
Ethanol	Based on the NITE GHS classification results.

STOT-single exposure

Chemical Name	STOT -single exposure- source information
Ethanol	Based on the NITE GHS classification results.

STOT-repeated exposure

Chemical Name	STOT -repeated exposure- source information
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Ethanol	Based on the NITE GHS classification results.
Aspiration hazard	
Chemical Name	Aspiration Hazard source information
Ethanol	Based on the NITE GHS classification results.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Ethanol 64-17-5	EC50: Chlorella alga 1000 mg/L 96 h	LC50: Fathead minnow > 100mg/L 96 h		LC50: Ceriodaphnia quadrangula 5012 mg/L 48 h

Persistence and degradability

Degree of decomposition : 89 % by BOD

Bioaccumulative potential

No information available

Mobility

Chemical Name	Partition coefficient
Ethanol 64-17-5	-0.32

Mobility in soil

No information available

Other Data

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Precautionary including method of disposing contaminated packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

DOT

UN/ID No UN1170
 Proper shipping name: Ethanol solution
 UN classification 3
 Subsidiary hazard class
 Packing group II
 Marine pollutant Not applicable

IATA

UN/ID No UN1170
 Proper shipping name: Ethanol solution
 UN classification 3
 Subsidiary hazard class
 Packing group II
 Environmentally Hazardous Substance Not applicable

IMDG

UN/ID No	UN1170
Proper shipping name:	Ethanol
UN classification	3
Subsidiary hazard class	
Packing group	II
Marine pollutant (Sea)	Not applicable

15. REGULATORY INFORMATION**International Inventories**

TSCA	Listed
DSL	Listed
NDSL	-
EINECS/ELINCS	Listed
ENCS	Listed

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations**California Proposition 65**

This product does not contain any chemicals regulated by Proposition 65

Chemical Name	California Proposition 65
Ethanol - 64-17-5	Carcinogen Developmental

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Ethanol 64-17-5	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

Issue Date 31-Mar-2016

Revision Date 05-Aug-2016

Revision Note

No information available

Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet