

## 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**

**Serious eye damage/eye irritation**

**Carcinogenicity**

**Reproductive Toxicity**

**Specific target organ toxicity (single exposure)**

**Category 3** Respiratory tract irritation, Narcotic effects

**Specific target organ toxicity (repeated exposure)**

**Category 1** liver

**Category 2** central nervous system

Category 2

Category 2B

Category 1A

Category 1A

Category 3

Category 1, Category 2

### 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 CO<sub>2</sub>, 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** C<sub>2</sub>H<sub>5</sub>OH

| 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**

|                                           |                                                                                                                                                                           |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye contact</b>                        | Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.                                                      |
| <b>Skin contact</b>                       | Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.                                                                                |
| <b>Inhalation</b>                         | Remove to fresh air.                                                                                                                                                      |
| <b>Ingestion</b>                          | 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. |
| <b>Self-protection of the first aider</b> | 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, CO<sub>2</sub>, 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<br>64-17-5 | STEL: 1000 ppm | TWA: 1000 ppm<br>TWA: 1900 mg/m <sup>3</sup><br>(vacated) TWA: 1000 ppm<br>(vacated) TWA: 1900 mg/m <sup>3</sup> | IDLH: 3300 ppm<br>TWA: 1000 ppm<br>TWA: 1900 mg/m <sup>3</sup> |

### 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 (CO<sub>2</sub>)

## 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<br>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 |
|---------------|---------------------------------------------|
|---------------|---------------------------------------------|

|                          |                                               |
|--------------------------|-----------------------------------------------|
| Ethanol                  | Based on the NITE GHS classification results. |
| <b>Aspiration hazard</b> |                                               |
| <b>Chemical Name</b>     | <b>Aspiration Hazard source information</b>   |
| Ethanol                  | Based on the NITE GHS classification results. |

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

| Chemical Name      | Algae/aquatic plants                | Fish                                | Toxicity to microorganisms | Crustacea                                     |
|--------------------|-------------------------------------|-------------------------------------|----------------------------|-----------------------------------------------|
| Ethanol<br>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<br>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<br>Developmental |

**U.S. State Right-to-Know Regulations**

| Chemical Name      | New Jersey | Massachusetts | Pennsylvania |
|--------------------|------------|---------------|--------------|
| Ethanol<br>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