1 Identification

· Product identifier
  · Trade name: ACID ALCOHOL, 1%
  · Article number: 26102-03, 26312-04
  · Application of the substance / the mixture: Laboratory chemicals

· Details of the supplier of the safety data sheet
  · Manufacturer/Supplier:
    Electron Microscopy Sciences
    1560 Industry Road
    USA-Hatfield, PA 19440
    Tel: 215-412-8400  Fax: 215-412-8450
    email: info@emsdiasum.com
    www.emsdiasum.com

· Information department: Product safety department

· Emergency telephone number:
  ChemTrec 1-800-424-9300  Contract CCN7661
  1-703-527-3887

2 Hazard(s) identification

· Classification of the substance or mixture
  · GHS02 Flame
    Flammable Liquids 2  H225 Highly flammable liquid and vapor.
    Substances and mixtures which, in contact with water, H260 In contact with water releases flammable gases, emit flammable gases 1 which may ignite spontaneously.

  · GHS08 Health hazard
    Carcinogenicity 1A  H350 May cause cancer.
    Specific Target Organ Toxicity - Single Exposure 2 H371 May cause damage to the central nervous system and the visual organs.

  · GHS05 Corrosion
    Skin Corrosion 1B  H314 Causes severe skin burns and eye damage.
    Eye Damage 1  H318 Causes serious eye damage.

· Label elements
  · GHS label elements: The product is classified and labeled according to the Globally Harmonized System (GHS).
  · Hazard pictograms

  GHS02  GHS05  GHS08

· Signal word: Danger

(Contd. on page 2)
Trade name: ACID ALCOHOL, 1%

- Hazard-determining components of labeling:
  Ethyl alcohol
  hydrogen chloride
  propan-2-ol
  Methyl Alcohol

- Hazard statements
  Highly flammable liquid and vapor.
  In contact with water releases flammable gases, which may ignite spontaneously.
  Causes severe skin burns and eye damage.
  May cause cancer.
  May cause damage to the central nervous system and the visual organs.

- Precautionary statements
  Obtain special instructions before use.
  Do not handle until all safety precautions have been read and understood.
  Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
  Do not allow contact with water.
  Handle under inert gas. Protect from moisture.
  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.
  Do not breathe dusts or mists.
  Wash thoroughly after handling.
  Do not eat, drink or smoke when using this product.
  Wear protective gloves/protective clothing/eye protection/face protection.
  If swallowed: Rinse mouth. Do NOT induce vomiting.
  If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  Immediately call a poison center/doctor.
  IF exposed or concerned: Get medical advice/attention.
  Specific treatment (see on this label).
  Brush off loose particles from skin. Immerse in cool water/-wrap in wet bandages.
  Wash contaminated clothing before reuse.
  In case of fire: Use CO2, sand, extinguishing powder to extinguish.
  Store in a dry place. Store in a closed container.
  Store in a well-ventilated place. Keep cool.
  Store locked up.
  Dispose of contents/container in accordance with local/regional/national/international regulations.

- Classification system:
  - NFPA ratings (scale 0 - 4)
    Health = 3
    Fire = 3
    Reactivity = 2

  The substance demonstrates unusual reactivity with water.
Trade name: ACID ALCOHOL, 1%

- HMIS-ratings (scale 0 - 4)
  - Health = *3
  - Fire = 3
  - Reactivity = 2

- Other hazards
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.

3 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description: Mixture of the substances listed below with nonhazardous additions.

- Dangerous components:
  - 64-17-5 Ethyl alcohol >50-% 100%
  - 67-63-0 propan-2-ol >2.5-% 10%
  - 67-56-1 Methyl Alcohol >2.5-% 10%
  - 7647-01-0 hydrogen chloride ≤2.5%

4 First-aid measures

- Description of first aid measures
- General information:
  Immediately remove any clothing soiled by the product. Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- After inhalation:
  Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. In case of unconsciousness place patient stably in side position for transportation.
- After skin contact:
  Immediately wash with water and soap and rinse thoroughly.
- After eye contact:
  Rinse opened eye for several minutes under running water. Then consult a doctor.
- After swallowing:
  Drink copious amounts of water and provide fresh air. Immediately call a doctor.
- Information for doctor:
  - Most important symptoms and effects, both acute and delayed: No further relevant information available.
  - Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents:
  CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- For safety reasons unsuitable extinguishing agents: Water
- Special hazards arising from the substance or mixture: No further relevant information available.
- Advice for firefighters
  - Protective equipment: Mouth respiratory protective device.
6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  Wear protective equipment. Keep unprotected persons away.
- Environmental precautions:
  Dilute with plenty of water.
  Do not allow to enter sewers/surface or ground water.
- Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Use neutralizing agent.
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
  Do not flush with water or aqueous cleansing agents
- Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

Protective Action Criteria for Chemicals

- PAC-1:
  - 64-17-5 Ethyl alcohol 1,800 ppm
  - 67-63-0 propan-2-ol 400 ppm
  - 67-56-1 Methyl Alcohol 530 ppm
  - 7647-01-0 hydrogen chloride 1.8 ppm

- PAC-2:
  - 64-17-5 Ethyl alcohol 3,300 ppm*
  - 67-63-0 propan-2-ol 2,000 ppm*
  - 67-56-1 Methyl Alcohol 2,100 ppm
  - 7647-01-0 hydrogen chloride 22 ppm

- PAC-3:
  - 64-17-5 Ethyl alcohol 15,000 ppm*
  - 67-63-0 propan-2-ol 12,000 ppm*
  - 67-56-1 Methyl Alcohol 7,200 ppm*
  - 7647-01-0 hydrogen chloride 100 ppm

7 Handling and storage

- Handling:
  - Precautions for safe handling
    Ensure good ventilation/exhaustion at the workplace.
    Prevent formation of aerosols.
  - Information about protection against explosions and fires:
    Keep ignition sources away. Do not smoke.
    Protect from heat.
    Protect against electrostatic charges.
- Conditions for safe storage, including any incompatibilities
- Storage:
  - Requirements to be met by storerooms and receptacles: Store in a cool location.
  - Information about storage in one common storage facility: Not required.
Trade name: ACID ALCOHOL, 1%

- **Further information about storage conditions:**
  - Keep receptacle tightly sealed.
  - Store in cool, dry conditions in well sealed receptacles.
  - Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
  - **Components with limit values that require monitoring at the workplace:**
    - **64-17-5 Ethyl alcohol**
      - PEL Long-term value: 1900 mg/m³, 1000 ppm
      - REL Long-term value: 1900 mg/m³, 1000 ppm
      - TLV Short-term value: 1000 ppm
      - A3
    - **67-63-0 propan-2-ol**
      - PEL Long-term value: 980 mg/m³, 400 ppm
      - REL Short-term value: 1225 mg/m³, 500 ppm
      - Long-term value: 980 mg/m³, 400 ppm
      - TLV Short-term value: 400 ppm
      - Long-term value: 200 ppm
      - BEI, A4
    - **67-56-1 Methyl Alcohol**
      - PEL Long-term value: 260 mg/m³, 200 ppm
      - REL Short-term value: 325 mg/m³, 250 ppm
      - Long-term value: 260 mg/m³, 200 ppm
      - Skin
      - TLV Short-term value: 250 ppm
      - Long-term value: 200 ppm
      - Skin; BEI
    - **7647-01-0 hydrogen chloride**
      - PEL Ceiling limit value: 7 mg/m³, 5 ppm
      - REL Ceiling limit value: 7 mg/m³, 5 ppm
      - TLV Ceiling limit value: 2 ppm
      - A4
  - **Ingredients with biological limit values:**
    - **67-63-0 propan-2-ol**
      - BEI 40 mg/L
      - Medium: urine
      - Time: end of shift at end of workweek
      - Parameter: Acetone (background, nonspecific)
    - **67-56-1 Methyl Alcohol**
      - BEI 15 mg/L
      - Medium: urine
      - Time: end of shift
      - Parameter: Methanol (background, nonspecific)
Additional information: The lists that were valid during the creation were used as basis.

Exposure controls

Personal protective equipment:

General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes. Avoid contact with the eyes and skin.

Breathing equipment:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:

Tightly sealed goggles

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form: Liquid
Color: Clear
Odor: Alcohol-like
Odor threshold: Not determined.

pH-value at 20 °C (68 °F): 1.19-1.39

Change in condition
Melting point/Melting range: Undetermined.
Boiling point/Boiling range: 78 °C (172.4 °F)

Flash point: 13 °C (55.4 °F)
### Flammability (solid, gaseous):
- Highly flammable.
- Contact with water liberates extremely flammable gases.

### Ignition temperature:
- 425 °C (797 °F)

### Decomposition temperature:
- Not determined.

### Auto igniting:
- Spontaneously flammable in air.

### Danger of explosion:
- Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

### Explosion limits:
- Lower: 3.5 Vol %
- Upper: 15 Vol %

### Vapor pressure at 20 °C (68 °F):
- 59 hPa (44.3 mm Hg)

### Density at 20 °C (68 °F):
- 0.85562 g/cm³ (1.14015 lbs/gal)
- Relative density: Not determined.
- Vapor density: Not determined.
- Evaporation rate: Not determined.

### Solubility in / Miscibility with Water:
- Fully miscible.

### Partition coefficient (n-octanol/water):
- Not determined.

### Viscosity:
- Dynamic: Not determined.
- Kinematic: Not determined.

### Solvent content:
- Organic solvents: 68.0 %
- Water: 31.0 %
- VOC content: 68.00 %
  - 791.9 g/l / 6.61 lb/gal
- Solids content: 0.0 %

### Other information
- No further relevant information available.

### Stability and reactivity

- Reactivity: No further relevant information available.
- Chemical stability
  - Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
  - Possibility of hazardous reactions: Contact with water releases flammable gases.
  - Conditions to avoid: No further relevant information available.
  - Incompatible materials: No further relevant information available.
  - Hazardous decomposition products: No dangerous decomposition products known.
11 Toxicological information

· Information on toxicological effects
· Acute toxicity:
  · LD/LC50 values that are relevant for classification:
  
  67-56-1 Methyl Alcohol

<table>
<thead>
<tr>
<th></th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5,628 mg/kg (rat)</td>
<td>15,800 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

· Primary irritant effect:
  · on the skin: Strong caustic effect on skin and mucous membranes.
  · on the eye: Strong caustic effect. Strong irritant with the danger of severe eye injury.
  · Sensitization: No sensitizing effects known.

· Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Corrosive
Irritant
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· Carcinogenic categories

- IARC (International Agency for Research on Cancer)
  64-17-5 Ethyl alcohol 1
  67-63-0 propan-2-ol 3
  7647-01-0 hydrogen chloride 3

- NTP (National Toxicology Program)
  None of the ingredients is listed.

- OSHA-Ca (Occupational Safety Health Administration)
  None of the ingredients is listed.

12 Ecological information

· Toxicity
· Aquatic toxicity: No further relevant information available.
· Persistence and degradability: No further relevant information available.
· Behavior in environmental systems:
· Bioaccumulative potential: No further relevant information available.
· Mobility in soil: No further relevant information available.
· Additional ecological information:
  · General notes:
  Water hazard class 1 (Self-assessment): slightly hazardous for water
  Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
  Must not reach bodies of water or drainage ditch undiluted or unneutralized.
  Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.
  · Results of PBT and vPvB assessment
  · PBT: Not applicable.
13 Disposal considerations

- **Waste treatment methods**
  - **Recommendation:**
    Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packagings:**
  - **Recommendation:** Disposal must be made according to official regulations.
  - **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

- **UN-Number**
  - DOT, ADR, IMDG, IATA: UN1987

- **UN proper shipping name**
  - **DOT:** Alcohols, n.o.s. (Ethanol, Isopropanol)
  - **ADR:** 1987 ALCOHOLS, N.O.S. (ETHANOL (ETHYL ALCOHOL), ISOPROPANOL (ISOPROPYL ALCOHOL))
  - **IMDG:** ALCOHOLS, N.O.S. (ETHANOL (ETHYL ALCOHOL), ISOPROPANOL (ISOPROPYL ALCOHOL))
  - **IATA:** ALCOHOLS, N.O.S. (ETHANOL, ISOPROPANOL (ISOPROPYL ALCOHOL))

- **Transport hazard class(es)**
  - **DOT**
    - **Class:** 3 Flammable liquids
    - **Label:** 3

- **ADR, IMDG, IATA**
  - **Class:** 3 Flammable liquids
  - **Label:** 3

- **Packing group**
  - **DOT, ADR, IMDG, IATA:** II

- **Environmental hazards:** Not applicable.

- **Special precautions for user**
  - **Warning:** Flammable liquids

- **Hazard identification number (Kemler code):** 33

- **EMS Number:** F-E,S-D

(Contd. on page 10)
### 5. Stowage Category

- **B**

### 6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable.

### 7. Transport/Additional information:

- **DOT**
  - **Quantity limitations**
    - On passenger aircraft/rail: 5 L
    - On cargo aircraft only: 60 L

- **ADR**
  - **Excepted quantities (EQ)**
    - Code: E2
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 500 ml

- **IMDG**
  - **Limited quantities (LQ)**
    - Code: E2
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 500 ml

### 8. UN "Model Regulation":

- **UN 1987 ALCOHOLS, N.O.S. (ETHANOL (ETHYL ALCOHOL), ISOPROPA NOL (ISOPROPYL ALCOHOL)), 3, II**

### 15. Regulatory information

#### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

- No further relevant information available.

#### 15.2 Sara

- **Section 355 (extremely hazardous substances):**
  - 7647-01-0 hydrogen chloride

- **Section 313 (Specific toxic chemical listings):**
  - 67-63-0 propan-2-ol
  - 67-56-1 Methyl Alcohol
  - 7647-01-0 hydrogen chloride

#### 15.3 TSCA (Toxic Substances Control Act):

- All components have the value ACTIVE.

#### 15.4 Hazardous Air Pollutants

- 67-56-1 Methyl Alcohol
- 7647-01-0 hydrogen chloride

#### 15.5 Proposition 65

- **Chemicals known to cause cancer:** None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for females:** None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for males:** None of the ingredients is listed.

- **Chemicals known to cause developmental toxicity:**
  - 64-17-5 Ethyl alcohol

(Contd. on page 11)
Trade name: ACID ALCOHOL, 1%

67-56-1  Methyl Alcohol

- **Carcinogenic categories**
  - EPA (Environmental Protection Agency) None of the ingredients is listed.
  - TLV (Threshold Limit Value)  
    - 64-17-5  Ethyl alcohol  A3  
    - 67-63-0  propan-2-ol  A4  
    - 7647-01-0  hydrogen chloride  A4

- **NIOSH-Ca (National Institute for Occupational Safety and Health)** None of the ingredients is listed.

- **GHS label elements**  The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Signal word** Danger
- **Hazard pictograms**  
  
  GHS02  GHS05  GHS08

- **Hazard-determining components of labeling:**  
  Ethyl alcohol  
  hydrogen chloride  
  propan-2-ol  
  Methyl Alcohol

- **Hazard statements**  
  Highly flammable liquid and vapor.  
  In contact with water releases flammable gases, which may ignite spontaneously.  
  Causes severe skin burns and eye damage.  
  May cause cancer.  
  May cause damage to the central nervous system and the visual organs.

- **Precautionary statements**  
  Obtain special instructions before use.  
  Do not handle until all safety precautions have been read and understood.  
  Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
  Do not allow contact with water.  
  Handle under inert gas. Protect from moisture.  
  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.  
  Do not breathe dusts or mists.  
  Wash thoroughly after handling.  
  Do not eat, drink or smoke when using this product.  
  Wear protective gloves/protective clothing/eye protection/face protection.  
  IF swallowed: Rinse mouth. Do NOT induce vomiting.  
  IF on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
  IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
  IF in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
## 55.0.4

Immediately call a poison center/doctor.
IF exposed or concerned: Get medical advice/attention.
Specific treatment (see on this label).
Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.
Wash contaminated clothing before reuse.
In case of fire: Use CO2, sand, extinguishing powder to extinguish.
Store in a dry place. Store in a closed container.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Contact:**
- **Date of preparation / last revision** 10/20/2022 / -
- **Abbreviations and acronyms:**
  - ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
  - VOC: Volatile Organic Compounds (USA, EU)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - NIOSH: National Institute for Occupational Safety
  - OSHA: Occupational Safety
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
  - BEI: Biological Exposure Limit
  - Flammable Liquids 2: Flammable liquids – Category 2
  - Substances and mixtures which, in contact with water, emit flammable gases 1: Substances and mixtures which in contact with water emit flammable gases – Category 1
  - Skin Corrosion 1B: Skin corrosion/irritation – Category 1B
  - Eye Damage 1: Serious eye damage/eye irritation – Category 1
  - Carcinogenicity 1A: Carcinogenicity – Category 1A
  - Specific Target Organ Toxicity - Single Exposure 2: Specific target organ toxicity (single exposure) – Category 2