1 Identification

- **Product identifier**
- **Trade name:** Custom Standard
- **Part number:** CUS-5409
- **Application of the substance / the mixture** Laboratory chemicals

- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:** ULTRA Scientific, Inc.
  - 250 Smith Street
  - North Kingstown, RI 02852
  - USA

- **Information department:**
  - Telephone: (401) 294-9400
  - Fax: (401) 295-2300
  - E-mail: regulatory@ultrasci.com
- **Emergency telephone number:**
  - US: +1-800-424-9300
  - Outside US: +1-703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - GHS08 Health hazard
  - Carc. 1A  H350  May cause cancer.

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

- **GHS08**

- **Signal word** Danger

- **Hazard-determining components of labeling:**
  - ethanol

- **Hazard statements**
  - May cause cancer.

- **Precautionary statements**
  - Obtain special instructions before use.
  - Do not handle until all safety precautions have been read and understood.
  - Wear protective gloves/protective clothing/eye protection/face protection.
  - IF exposed or concerned: Get medical advice/attention.
  - Store locked up.
  - Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)
Trade name: Custom Standard

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

- HMIS-ratings (scale 0 - 4)
  
  HEALTH  
  HEAT = *0  
  FIRE  
  FIRE = 0  
  REACTIVITY  
  REACTIVITY = 0

- 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.

<table>
<thead>
<tr>
<th>Dangerous components:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>64-17-5</td>
<td>ethanol</td>
</tr>
<tr>
<td>109-99-9</td>
<td>tetrahydrofuran</td>
</tr>
</tbody>
</table>

4 First-aid measures

- Description of first aid measures
  
  After inhalation: Supply fresh air; consult doctor in case of complaints.  
  After skin contact: Generally the product does not irritate the skin.  
  After eye contact: Rinse opened eye for several minutes under running water.  
  After swallowing: If symptoms persist consult 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: Use fire fighting measures that suit the environment.  
  - Special hazards arising from the substance or mixture: No further relevant information available.  
  - Advice for firefighters
  - Protective equipment: No special measures required.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures: Not required.  
- Environmental precautions: No special measures required.
Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

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:
- 75-05-8 acetonitrile 13 ppm
- 67-56-1 methanol 530 ppm
- 64-17-5 ethanol 1,800 ppm
- 109-99-9 tetrahydrofuran 100 ppm
- 67-63-0 propan-2-ol 400 ppm
- 141-78-6 ethyl acetate 1,200 ppm

PAC-2:
- 75-05-8 acetonitrile 50 ppm
- 67-56-1 methanol 2,100 ppm
- 64-17-5 ethanol 3300* ppm
- 109-99-9 tetrahydrofuran 500 ppm
- 67-63-0 propan-2-ol 2000* ppm
- 141-78-6 ethyl acetate 1,700 ppm

PAC-3:
- 75-05-8 acetonitrile 150 ppm
- 67-56-1 methanol 7200* ppm
- 64-17-5 ethanol 15000* ppm
- 109-99-9 tetrahydrofuran 5000* ppm
- 67-63-0 propan-2-ol 12000** ppm
- 141-78-6 ethyl acetate 10000** ppm

Handling and storage

Handling:
- Precautions for safe handling Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires: No special measures required.

Conditions for safe storage, including any incompatibilities

Storage:
- Requirements to be met by storerooms and receptacles: No special requirements.
- Information about storage in one common storage facility: Not required.
- Further information about storage conditions: None.

Specific end use(s) No further relevant information available.

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:

<table>
<thead>
<tr>
<th>Component</th>
<th>PEL Long-term value</th>
<th>REL Long-term value</th>
<th>TLV Short-term value</th>
</tr>
</thead>
<tbody>
<tr>
<td>64-17-5 ethanol</td>
<td>1900 mg/m³, 1000 ppm</td>
<td>1900 mg/m³, 1000 ppm</td>
<td>1880 mg/m³, 1000 ppm</td>
</tr>
<tr>
<td>109-99-9 tetrahydrofuran</td>
<td>590 mg/m³, 200 ppm</td>
<td>735 mg/m³, 250 ppm</td>
<td>295 mg/m³, 100 ppm</td>
</tr>
</tbody>
</table>

### Ingredients with biological limit values:

**109-99-9 tetrahydrofuran**

- **BEI**: 2 mg/L  
  - Medium: urine  
  - Time: end of shift  
  - Parameter: Tetrahydrofuran

### 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.
- Wash hands before breaks and at the end of work.
- Store protective clothing separately.

### 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](image)

### 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 cannot 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.
Trade name: Custom Standard

- Eye protection:
  Tightly sealed goggles

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### 9 Physical and chemical properties

<table>
<thead>
<tr>
<th>Information on basic physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Information</td>
</tr>
<tr>
<td>Appearance:</td>
</tr>
<tr>
<td>Form: Fluid</td>
</tr>
<tr>
<td>Color: Colorless</td>
</tr>
<tr>
<td>Odor: Odorless</td>
</tr>
<tr>
<td>Odor threshold: Not determined.</td>
</tr>
<tr>
<td>pH-value: Not determined.</td>
</tr>
<tr>
<td>Change in condition</td>
</tr>
<tr>
<td>Melting point/Melting range: Undetermined.</td>
</tr>
<tr>
<td>Boiling point/Boiling range: 100 °C (212 °F)</td>
</tr>
<tr>
<td>Flash point: Not applicable.</td>
</tr>
<tr>
<td>Flammability (solid, gaseous): Not applicable.</td>
</tr>
<tr>
<td>Decomposition temperature: Not determined.</td>
</tr>
<tr>
<td>Auto igniting: Product is not selfigniting.</td>
</tr>
<tr>
<td>Danger of explosion: Product does not present an explosion hazard.</td>
</tr>
<tr>
<td>Explosion limits:</td>
</tr>
<tr>
<td>Lower: Not determined.</td>
</tr>
<tr>
<td>Upper: Not determined.</td>
</tr>
<tr>
<td>Vapor pressure at 20 °C (68 °F): 23 hPa (17.3 mm Hg)</td>
</tr>
<tr>
<td>Density at 20 °C (68 °F): 0.99896 g/cm³ (8.33632 lbs/gal)</td>
</tr>
<tr>
<td>Relative density: Not determined.</td>
</tr>
<tr>
<td>Vapor density: Not determined.</td>
</tr>
<tr>
<td>Evaporation rate: Not determined.</td>
</tr>
<tr>
<td>Solubility in / Miscibility with Water: Not miscible or difficult to mix.</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water): Not determined.</td>
</tr>
<tr>
<td>Viscosity:</td>
</tr>
<tr>
<td>Dynamic at 20 °C (68 °F): 0.952 mPas</td>
</tr>
<tr>
<td>Kinematic: Not determined.</td>
</tr>
<tr>
<td>Solvent content:</td>
</tr>
<tr>
<td>Organic solvents: 0.5 %</td>
</tr>
<tr>
<td>Water: 99.4 %</td>
</tr>
<tr>
<td>VOC content: 0.50 %</td>
</tr>
<tr>
<td>5.0 g/l / 0.04 lb/gl</td>
</tr>
<tr>
<td>Solids content: 0.0 %</td>
</tr>
</tbody>
</table>

(Contd. on page 6)
10 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**: No dangerous reactions known.
- **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**:
    - ATE (Acute Toxicity Estimate)
      - **Inhalative**
        - **LC50/4 h**: 3,000 mg/L
      - **64-17-5 ethanol**
        - **Oral LD50**: >5,000 mg/kg (rat)
        - **Inhalative LC50/4 h**: 20,000 mg/L (rat)
      - **109-99-9 tetrahydrofuran**
        - **Oral LD50**: 2,500 mg/kg (rat)
- **Primary irritant effect**:
  - **on the skin**: No irritant effect.
  - **on the eye**: No irritating effect.
  - **Sensitization**: No sensitizing effects known.
- **Additional toxicological information**:
  - The product shows the following dangers according to internally approved calculation methods for preparations:
- **Carcinogenic categories**
  - **IARC (International Agency for Research on Cancer)**
    - 64-17-5 ethanol 1
    - 67-63-0 propan-2-ol 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.
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.

14 Transport information

- **UN-Number**
  - DOT, IMDG, IATA: not regulated
- **UN proper shipping name**
  - DOT, IMDG, IATA: not regulated
- **Transport hazard class(es)**
  - DOT, IMDG, IATA: not regulated
- **Packing group**
  - DOT, IMDG, IATA: not regulated
- **Environmental hazards:**
  - Not applicable.
- **Special precautions for user**
  - Not applicable.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**
  - Not applicable.
- **UN "Model Regulation":**
  - Not regulated

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - **Sara**
    - **Section 355 (extremely hazardous substances):**
      - None of the ingredients is listed.
    - **Section 313 (Specific toxic chemical listings):**
      - 75-05-8 acetonitrile
      - 67-56-1 methanol
Safety Data Sheet
acc. to OSHA HCS

Printing date 07/13/2018
Version Number 1
Reviewed on 07/13/2018

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67-63-0 propan-2-ol

- TSCA (Toxic Substances Control Act):
  All ingredients are listed.

- 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:
    67-56-1 methanol
    64-17-5 ethanol

- Carcinogenic categories

  - EPA (Environmental Protection Agency)
    75-05-8 acetonitrile CBD, D
    109-99-9 tetrahydrofuran SC

  - TLV (Threshold Limit Value established by ACGIH)
    75-05-8 acetonitrile A4
    64-17-5 ethanol A3
    109-99-9 tetrahydrofuran A3
    67-63-0 propan-2-ol 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).

- Hazard pictograms

  GHS08

  - Signal word
    Danger

- Hazard-determining components of labeling:
  ethanol

- Hazard statements
  May cause cancer.

- Precautionary statements
  Obtain special instructions before use.
  Do not handle until all safety precautions have been read and understood.
  Wear protective gloves/protective clothing/eye protection/face protection.
  IF exposed or concerned: Get medical advice/attention.
  Store locked up.
  Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. of page 7)
(Contd. of page 8)

- **National regulations:**
- **Additional classification according to Decree on Hazardous Materials:**
  Carcinogenic hazardous material group III (dangerous).

- **Information about limitation of use:**
  Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation.
  Exceptions can be made by the authorities in certain cases.

- **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.

- **Date of preparation / last revision** 07/13/2018 / -
- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport 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
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - 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 & Health
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
  - BEI: Biological Exposure Limit
  - Carc. 1A: Carcinogenicity – Category 1A