SECTION 1: Identification

1.1. Identification

Product form : Substance
Substance name : Acetonitrile
CAS No : 75-05-8
Product code : LC10460
Formula : C2H3N
Synonyms : ACE / acetic acid nitrile / cyanomethane / ethane nitrile / ethyl nitrile / methane carbonitrile / methyl cyanide

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Laboratory chemical
Solvent
Chemical raw material
Pesticide: intermediate product
Stabilizer
Catalyst

1.3. Details of the supplier of the safety data sheet

LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 or 011-703-527-3887

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification
Flammable liquids Category 2 H225
Acute toxicity (dermal) Category 3 H311
Full text of H statements : see section 16

2.2. Label elements

GHS-US labeling
Hazard pictograms (GHS-US) : 

Signal word (GHS-US) : Danger
Hazard statements (GHS-US) : H225 - Highly flammable liquid and vapor
H311 - Toxic in contact with skin
Precautionary statements (GHS-US) : 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
P280 - Wear protective gloves, protective clothing, eye protection, face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P312 - Call a POISON CENTER or doctor/physician if you feel unwell
P361 - Remove/Take off immediately all contaminated clothing
P363 - Wash contaminated clothing before reuse
P370 + P378 - In case of fire: Use carbon dioxide (CO2), powder, alcohol-resistant foam to extinguish
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2.3. Other hazards

Other hazards not contributing to the classification : None.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substance

Substance type : Mono-constituent

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetonitrile (Main constituent)</td>
<td>(CAS No) 75-05-8</td>
<td>100</td>
<td>Flam. Liq. 2, H225</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 3 (Dermal), H311</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements : see section 16

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures


First-aid measures after inhalation : Remove the victim into fresh air. Do not apply mouth-to-mouth resuscitation. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact : Wash immediately with lots of water. Soap may be used. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.

First-aid measures after eye contact : Rinse immediately with plenty of water. Take victim to an ophthalmologist if irritation persists.


4.2. Most important symptoms and effects, both acute and delayed


Symptoms/injuries after skin contact : FOLLOWING SYMPTOMS MAY APPEAR LATER: Symptoms similar to those listed under inhalation.

Symptoms/injuries after eye contact : Irritation of the eye tissue.

Symptoms/injuries after ingestion : Risk of aspiration pneumonia. FOLLOWING SYMPTOMS MAY APPEAR LATER: Symptoms similar to those listed under inhalation.


4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media


Unsuitable extinguishing media : Solid water jet ineffective as extinguishing medium.
5.2. Special hazards arising from the substance or mixture

Fire hazard  : DIRECT FIRE HAZARD. Highly flammable. Gas/vapor flammable with air within explosion limits. INDIRECT FIRE HAZARD. May build up electrostatic charges: risk of ignition. May be ignited by sparks. Gas/vapor spreads at floor level: ignition hazard. Reactions involving a fire hazard: see "Reactivity Hazard".

Explosion hazard  : DIRECT EXPLOSION HAZARD. Gas/vapour explosive with air within explosion limits. INDIRECT EXPLOSION HAZARD. may be ignited by sparks. Reactions with explosion hazards: see "Reactivity Hazard".


5.3. Advice for firefighters

Firefighting instructions  : Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Dilute toxic gases with water spray. Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.


SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel


6.1.2. For emergency responders

Protective equipment  : Equip cleanup crew with proper protection.

Emergency procedures  : Ventilate area. Stop leak if safe to do so.

6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

For containment  : Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the liquid spill. Try to reduce evaporation. Measure the concentration of the explosive gas-air mixture. Dilute/disperse combustible gas/vapour with water curtain. Provide equipment/receptacles with earthing. Do not use compressed air for pumping over spills.

Methods for cleaning up  : Take up liquid spill into a non combustible material e.g.: sand, earth, vermiculite. Scoop absorbed substance into closing containers. See "Material-handling" for suitable container materials. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4. Reference to other sections

No additional information available
SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling:
- Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Handle uncleaned empty containers as full ones. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Do not use compressed air for pumping over. Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Avoid contact of substance with water. Observe normal hygiene standards. Keep container tightly closed. Measure the concentration in the air regularly. Work under local exhaust/ventilation.

Hygiene measures:
- Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Incompatible products: Oxidizing agent. silver nitrate.
Heat-ignition: KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.
Special rules on packaging:
- SPECIAL REQUIREMENTS: hermetical. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials:
- SUITABLE MATERIAL: stainless steel. aluminium. iron. polyethylene. glass. MATERIAL TO AVOID: copper. plastics.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Acetonitrile (75-05-8)</th>
<th>ACGIH TWA (ppm)</th>
<th>20 ppm (Acetonitrile; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>OSHA PEL (TWA) (mg/m³)</td>
<td>70 mg/m³</td>
</tr>
<tr>
<td>OSHA</td>
<td>OSHA PEL (TWA) (ppm)</td>
<td>40 ppm</td>
</tr>
<tr>
<td>IDLH</td>
<td>US IDLH (ppm)</td>
<td>500 ppm</td>
</tr>
<tr>
<td>NIOSH</td>
<td>NIOSH REL (TWA) (mg/m³)</td>
<td>34 mg/m³</td>
</tr>
<tr>
<td>NIOSH</td>
<td>NIOSH REL (TWA) (ppm)</td>
<td>20 ppm</td>
</tr>
</tbody>
</table>

8.2. Exposure controls

Appropriate engineering controls: Ensure adequate ventilation. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection: Gloves.
Eye protection: Safety glasses.
Skin and body protection: Head/neck protection. Protective clothing.
Respiratory protection: Wear gas mask with filter type A if conc. in air > exposure limit.
### Acetonitrile

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<table>
<thead>
<tr>
<th>SECTION 9: Physical and chemical properties</th>
<th>Physical state: Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance: Liquid.</td>
<td></td>
</tr>
<tr>
<td>Color: Colourless</td>
<td></td>
</tr>
<tr>
<td>Odor: Sweet odour Aromatic odour Ether-like odour</td>
<td></td>
</tr>
<tr>
<td>Odor threshold: 42 ppm</td>
<td></td>
</tr>
<tr>
<td>pH: No data available</td>
<td></td>
</tr>
<tr>
<td>Melting point: -46 °C</td>
<td></td>
</tr>
<tr>
<td>Freezing point: No data available</td>
<td></td>
</tr>
<tr>
<td>Boiling point: 82 °C</td>
<td></td>
</tr>
<tr>
<td>Critical temperature: 275 °C</td>
<td></td>
</tr>
<tr>
<td>Critical pressure: 48320 hPa</td>
<td></td>
</tr>
<tr>
<td>Flash point: 6 °C</td>
<td></td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1): 5.8</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas): No data available</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure: 97 hPa (20 °C)</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure at 50 °C: 360 hPa (50 °C)</td>
<td></td>
</tr>
<tr>
<td>Relative vapor density at 20 °C: 1.4</td>
<td></td>
</tr>
<tr>
<td>Relative density: 0.79 (20 °C)</td>
<td></td>
</tr>
<tr>
<td>Relative density of saturated gas/air mixture: 1.04</td>
<td></td>
</tr>
<tr>
<td>Specific gravity / density: 787 kg/m³</td>
<td></td>
</tr>
<tr>
<td>Molecular mass: 41.05 g/mol</td>
<td></td>
</tr>
<tr>
<td>Log Pow: 0.29 (Weight of evidence approach; Equivalent or similar to OECD 107; 25 °C)</td>
<td></td>
</tr>
<tr>
<td>Auto-ignition temperature: 524 °C</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature: &gt; 120 °C</td>
<td></td>
</tr>
<tr>
<td>Viscosity, kinematic: 3.80 mm²/s</td>
<td></td>
</tr>
<tr>
<td>Viscosity, dynamic: 0.0030 Pa.s (40 °C)</td>
<td></td>
</tr>
<tr>
<td>Explosion limits: 3.0 - 16.0 vol %</td>
<td></td>
</tr>
<tr>
<td>Explosive properties: No data available</td>
<td></td>
</tr>
<tr>
<td>Oxidizing properties: No data available</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9.2. Other information</th>
<th>Specific conductivity: 60000 pS/m</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Saturation concentration: 163 g/m³</td>
</tr>
<tr>
<td></td>
<td>VOC content: 100 %</td>
</tr>
<tr>
<td></td>
<td>Other properties: Gas/vapour heavier than air at 20°C. Clear. Volatile. Substance has neutral reaction. May generate electrostatic charges.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chemical stability: Unstable on exposure to moisture.</td>
</tr>
</tbody>
</table>
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10.3. Possibility of hazardous reactions
No additional information available

10.4. Conditions to avoid
High temperature. Open flame. Sparks.

10.5. Incompatible materials

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure: Inhalation; Skin and eye contact
Acute toxicity: Dermal: Toxic in contact with skin.

Acetonitrile (75-05-8)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>&gt; 1327 mg/kg (Rat)</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>980 mg/kg (Rabbit)</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>27 mg/l/4h (Rat)</td>
</tr>
<tr>
<td>LC50 inhalation rat (ppm)</td>
<td>16000 ppm/4h (Rat)</td>
</tr>
<tr>
<td>ATE US (dermal)</td>
<td>980.000 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (dust, mist)</td>
<td>27,000 mg/l/4h</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Not classified
Serious eye damage/irritation: Not classified
Respiratory or skin sensitization: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified
Reproductive toxicity: Not classified
Specific target organ toxicity (single exposure): Not classified
Specific target organ toxicity (repeated exposure): Not classified
Aspiration hazard: Not classified


Symptoms/injuries after skin contact: FOLLOWING SYMPTOMS MAY APPEAR LATER: Symptoms similar to those listed under inhalation.

Symptoms/injuries after eye contact: Irritation of the eye tissue.

Symptoms/injuries after ingestion: Risk of aspiration pneumonia. FOLLOWING SYMPTOMS MAY APPEAR LATER: Symptoms similar to those listed under inhalation.


SECTION 12: Ecological information

12.1. Toxicity

Ecology - general: Classification concerning the environment: not applicable.
Ecology - air: Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water: Ground water pollutant. Maximum concentration in drinking water: 0.050 mg/l (cyanide) (Directive 98/83/EC). Not harmful to fishes (LC50(96h) >1000 mg/l). Not harmful to invertebrates (Daphnia) (EC50 (48h) > 1000 mg/l). Not harmful to algae (EC50 (72h) >1000 mg/l). Highly toxic to plankton. Not harmful to bacteria (EC50 >1000 mg/l). Inhibition of activated sludge. Nitrification of activated sludge isn't inhibited.
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12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Acetonitrile (75-05-8)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Readily biodegradable in water. No test data on mobility of the substance available.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>0.17 g O₂/g substance</td>
</tr>
<tr>
<td>ThOD</td>
<td>3.12 g O₂/g substance</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
<td>0.055</td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Acetonitrile (75-05-8)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF other aquatic organisms 1</td>
<td>3.162 (BCF; BCFWIN)</td>
</tr>
<tr>
<td>Log Pow</td>
<td>0.29 (Weight of evidence approach; Equivalent or similar to OECD 107; 25 °C)</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>Low potential for bioaccumulation (Log Kow &lt; 4).</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

<table>
<thead>
<tr>
<th>Acetonitrile (75-05-8)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface tension</td>
<td>0.029 N/m (20 °C)</td>
</tr>
</tbody>
</table>

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations: Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle by distillation. Do not landfill. Remove to an authorized waste incinerator for solvents with energy recovery. Do not discharge into drains or the environment.

Additional information: LWCA (the Netherlands): KGA category 06. Hazardous waste according to Directive 2008/98/EC.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description: UN1648 Acetonitrile, 3, II

UN-No.(DOT): UN1648

Proper Shipping Name (DOT): Acetonitrile

Transport hazard class(es) (DOT): 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Packing group (DOT): II - Medium Danger

Hazard labels (DOT): 3 - Flammable liquid
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DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
DOT Packaging Bulk (49 CFR 173.xxx) : 242
DOT Special Provisions (49 CFR 172.102) : IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 °C (1.1 bar at 122 °F), or 130 kPa at 55 °C (1.3 bar at 131 °F) are authorized

TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image)

Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 °C (59 °F) and 50 °C (122 °F), respectively

DOT Packaging Exceptions (49 CFR 173.xxx) : 150
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L

DOT Vessel Stowage Location : B - (i) The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) “On deck only” on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded

DOT Vessel Stowage Other : 40 - Stow “clear of living quarters”
Other information : No supplementary information available.

SECTION 15: Regulatory information

15.1. US Federal regulations

Acetonitrile (75-05-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
RQ (Reportable quantity, section 304 of EPA’s List of Lists) 5000 lb

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

Acetonitrile (75-05-8)
Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification

Class B Division 2 - Flammable Liquid
Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects

EU-Regulations
No additional information available

National regulations

Acetonitrile (75-05-8)
Listed on the Canadian IDL (Ingredient Disclosure List)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Revision date : 09/21/2016
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Full text of H-phrases: see section 16:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H225</td>
<td>Highly flammable liquid and vapor</td>
</tr>
<tr>
<td>H311</td>
<td>Toxic in contact with skin</td>
</tr>
</tbody>
</table>

NFPA health hazard: 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard: 3 - Liquids and solids that can be ignited under almost all ambient conditions.

NFPA reactivity: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

HMSC III Rating
Health: 2 Moderate Hazard - Temporary or minor injury may occur
Flammability: 3 Serious Hazard - Materials capable of ignition under almost all normal temperature conditions. Includes flammable liquids with flash points below 73 F and boiling points above 100 F, as well as liquids with flash points between 73 F and 100 F. (Classes IB & IC)
Physical: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal protection: H - Splash goggles, Gloves, Synthetic apron, Vapor respirator

SDS US LabChem

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