Name: Acetonitrile
Code: 1-270010-200, 1-270010-500

SECTION 1 ........................ IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY ...............................................

1.1 Product Identifier
Name Acetonitrile
Code 1-270010-200, 1-270010-500

1.2 Use of Substance/Mixture
Use Analytical Reagent—GC Derivatization; Silylation Reagent

1.3 Details of Manufacturer/Supplier
Company Regis Technologies, Inc.
8210 N. Austin Avenue
Morton Grove, IL 60053
847-967-6000; 800-323-8144 (toll free)
Email: cservice@registech.com
www.registech.com

1.4 Emergency Telephone
INFOTRAC 800-535-5053 [U.S.A.]

SECTION 2 ...............................................................  HAZARDS IDENTIFICATION ..................................................................................

2.1 Classification of the Substance or Mixture
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Physical Hazards
- Flammable Liquid Category 2 H225
Health Hazards
- Acute Toxicity, Oral Category 4 H302
- Acute Toxicity, Dermal Category 4 H312
- Acute Toxicity, Inhalation Category 4 H332
- Serious Eye Damage / Irritation Category 2A H319

Environmental Hazards - Not classified

GHS Label Elements
Pictograms or hazard symbols

Signal Word Danger

Hazard Statement
H225 – Highly flammable liquid and vapor.
H315+H312+H332 – Harmful if swallowed, in contact with skin, or inhaled.
H319 – Causes severe eye irritation.

Precautionary Statements
[Prevention] P210 – Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P264 – Wash thoroughly after handling.
P280 – Wear protective gloves/protective clothing/eye protection/face protection.

P302+P352 – IF ON SKIN: Wash with plenty of soap and water.
P304+P340 – IF INHALED: Removed victim to fresh air and keep at rest in a position comfortable for breathing.

Some abbreviations used throughout this MSDS: NA=not applicable; NE=not established; U=unknown/unavailable; NL=not listed; N=no; Y=yes.
P305+P351+P338 – IF IN EYES: Rinse cautiously with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing.
P331+P334 – Get medical advice/attention if you feel unwell.
P403+P235 – Store in a well-ventilated place. Keep cool.

SECTION 3  COMPOSITION / INFORMATION ON INGREDIENTS

Name: Acetonitrile
Synonyms: Methyl Cyanide; Ethyl Nitrile; Cyanomethane; ACN

Hazardous components

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetonitrile</td>
<td>Flam. Liq. 2; Acute Tox. 4; Eye Irr. 2; H225, H302+H312+H332, H319</td>
<td>≤ 100%</td>
</tr>
</tbody>
</table>

For full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4  FIRST AID MEASURES

4.1 Description of first aid measures
Eye contact: Rinse eyes with plenty of water for at least 15 minutes; lift eyelids occasionally. If irritation persists, consult physician.
Skin contact: Immediately remove contaminated clothing and shoes, then wash skin with soap and plenty of water. If irritation persists, consult physician.
Inhalation: Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and keep person warm and at rest. Consult physician.
Ingestion: Give large amounts of water or milk (two glasses at most). Avoid vomiting. Consult physician immediately.
Physician note: Symptomatic and supportive care. There is no specific antidote.

4.2 Most important symptoms and effects, both acute and delayed.
Eyes: can cause severe irritation, dryness, lacrimation (excessive tearing). Extremely irritating to mucous membranes or eye and upper respiratory tract. Other symptoms may be headache, nausea, vomiting, diarrhea, drowsiness, dizziness, rashes, cyanosis (with a bluing of the skin or lips).

4.3 Indication of immediate medical attention and special treatment needed.
Treat as cyanide poisoning. Utilize a cyanide kit, if available. Delayed effects are possible due to conversion to cyanide. Overexposure may cause eye, skin, and/or respiratory irritation, flushing of face, chest tightness. may include; central nervous system disorders such as mental excitement, depression, drowsiness, impaired perception, incoordination, stupor, coma, and death.

SECTION 5  FIRE-FIGHTING MEASURES

5.1 Suitable Extinguishing Media
Carbon dioxide, dry chemical powder, dry sand, foam.
Water may be effective for cooling, but may not effect extinguishment for large fires.

5.2 Specific hazards arising from the chemical.
Highly flammable liquid and vapor.
Contact with strong oxidizers may cause fire.
Sensitive to static discharge.
Vapors are heavier than air and may travel a considerable distance to ignition sources and flash back.
Vapor-air mixtures are explosive above flash point, within above stated limits.
Containers may build pressure or rupture when heated. Container explosion may occur under fire conditions.

Some abbreviations used throughout this MSDS: NA=not applicable; NE=not established; U=unknown/unavailable; NL=not listed; N=no; Y=yes.
Exposure to oxidizers or acids could start or accelerate fire conditions. Emits toxic fumes under fire conditions: carbon monoxide, carbon dioxide, nitrogen oxides, hydrogen cyanide.

5.3 Advice for fire-fighters
Wear personal protective equipment for flammable organic/acid vapor conditions.

SECTION 6 ....................................................... ACCIDENTAL RELEASE MEASURES.................................................................................................

6.1 Personal precautions, protective equipment, and emergency procedures
For non-emergency personnel - Avoid material contact or inhalation of mists. Evacuate unnecessary personnel from area.

For emergency responders – Wear protective clothing to prevent contact with skin and eyes. Avoid breathing mists. Wear NIOSH/MSHA approved respirator for organic/acid gas, dust, and mists to prevent inhalation. See Section 8.3.

6.2 Environmental precautions
Prevent material from entering drains.

6.3 Methods of clean up
Evacuate unnecessary people from area. Isolate spilled material. Ventilate area. Eliminate all ignition sources. Use spark proof tools. Contain and recover material when possible. If neat or in solution, mix with sand or similar inert adsorbent material or spill pillow. Sweep up, if not absorbed in pillow, seal in appropriate hazardous waste container, and hold for proper waste disposal. Keep out of water supplies and sewers. Wash spill site after material pickup is complete.

6.4 Special Note
Spills can be reacted in alkaline hypochlorite solution to produce cyanate and then neutralized.

SECTION 7 ............................................................... HANDLING AND STORAGE.................................................................................................

7.1 Precautions for Safe Handling
Observe precautions in Section 2.
Avoid inhalation contact with vapor, mist or contact with liquid.
Wear suitable protective equipment to avoid contact with skin, eyes, or inhalation of organic/acid vapors or mists.
Immediately remove contaminated clothing and wash thoroughly as material is readily adsorbed through skin.
Ground and bond containers or use inert gas purge when transferring or handling material.
Use spark proof tools and explosion proof equipment.
Empty containers retain product residue, (liquid/vapor), and can be dangerous. Do Not attempt to clean empty containers as residue is difficult to remove.

7.2 Conditions for safe storage, including any incompatibilities
Store in tightly closed vessel in area suitable for flammable liquids, away from ignition and heat sources.
Store in a cool, dry place with adequate ventilation.
Store away from incompatible materials (See Section 10.).

SECTION 8 .......................................... EXPOSURE CONTROLS / PERSONAL PROTECTION.................................................................................................

8.1 Control parameters

<table>
<thead>
<tr>
<th>Substance</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetonitrile</td>
<td>OSHA: PEL – 40 ppm (70 mg/m³) - 8hr TWA; STEL – 60 ppm (105 mg/m³)</td>
</tr>
<tr>
<td></td>
<td>ACGIH: TLV – 40 ppm (70 mg/m³) - 8hr TWA</td>
</tr>
<tr>
<td></td>
<td>NIOSH: Air REL – 20 ppm (34 mg/m³) - 10hr TWA;</td>
</tr>
<tr>
<td></td>
<td>Immediately Dangerous To Life or Health Concentration (IDLH): 500 ppm</td>
</tr>
</tbody>
</table>

Environmental: Do not empty into drains.
8.2 Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice.
Local exhaust and mechanical ventilation required. Hood recommended. Fume scrubber. Safety shower and eye wash.

8.3 Personal protection
Eye/Face Tightly fitting safety goggles or safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US).
Hand Use compatible chemical-resistant gloves.
Respiratory If exposure to mist or vapors likely: NIOSH/MSHA (US) approved respirator for organic/acid vapor and mists.
Dermal (not hand) Protective Clothing (e.g., lab coat)
Hygiene Avoid inhalation, ingestion; contact with eyes, skin, and clothing; Avoid prolonged or repeated exposure. Remove contaminated clothing and discard contaminated footware. Wash thoroughly after handling.

SECTION 9 ................................................... PHYSICAL AND CHEMICAL PROPERTIES .................................................................

9.1 Information on physical and chemical data

Form liquid
Appearance clear, colorless
Odor sweetish, aromatic or ether odor
Odor threshold 41.69 ppm (70 mg/m³) (Lit.)
pH Not available
Melting/freezing point -48°C (54°F)
Boiling point: 81-82°C (180-181°F) at 1.013 hPa
Flammability (liquid) 
Flash Point 2°C (36°F) Method: cc
Flammable limits (%v/v) UEL (upper explosive limit) 16%
LEL (lower explosive limit) 4.4%
Autoignition temperature 524°C (975°F)
Decomposition temperature Distillable in an undecomposed state at normal pressure.
OSHA Flammability Class IB
Evaporation Rate (BuAc = 1.0) 5.79
Vapor pressure (mmHg) 97 hPa (20°C)
Vapor density (air=1): 1.41
Relative density (g/cm³) 0.786 at (20°C)
Water Solubility/Reactive soluble at (20°C)
Solubility (other) Not available
Partition coefficient: N-octanol/water Kow (Pow) = -0.34 (Bioaccumulation not expected (IUCLID))
Viscosity, dynamic 0.316 mPa.s at (25°C)
Explosive Not classified as an explosive.

SECTION 10 .......................................................... STABILITY AND REACTIVITY .................................................................

10.1 Reactivity
Vapors may form explosive mixture with air.

10.2 Chemical Stability
Heat sensitive. Distillable in an undecomposed state at normal pressure.

10.3 Possibility of hazardous reactions
Violent reactions possible with: strong bases, strong reducing agents
Risk of explosion with: nitrates, perchlorates, perchloric acid, or conc. sulfuric acid with heat
Risk of ignition or formation of flammable gases or vapors with: oxidizing agents, nitric acid
Generates dangerous gases or fumes in contact with: Acids.
Flammable liquid and vapor—protect from heat and ignition sources.

Some abbreviations used throughout this MSDS: NA=not applicable; NE=not established; U=unknown/unavailable; NL=not listed; N=no; Y=yes.
10.4 Conditions to avoid
Avoid incompatibilities.
Protect from static, heat, flames, sparks, and ignition sources.
Keep out of water supplies and sewers.

10.5 Incompatible materials
rubber, various plastics
Water, moisture, or humid air—hygroscopic.

10.6 Hazardous decomposition products
Combustion: carbon monoxide, carbon dioxide, nitrogen oxides, hydrogen cyanide

SECTION 11 .........................................................  TOXICOLOGICAL INFORMATION ..............................................................................

11.1 Toxicological Information
Acute toxicity
Oral oral mouse LD50 617 mg/kg (OECD Test Guideline 401)
Inhalation (vapor) ihl mouse LC50 6.026 mg/m³ (4 h), vapor; absorption
Dermal skin rbt LD50 >2000 mg/kg (OECD Test Guideline 402); absorption
Skin corrosion/irritation rabbit: no skin irritation (OECD Test Guideline 404)
Serious eye damage/irritation rabbit: serious eye irritation (OECD Test Guideline 405)
Respiratory irritation No data available
Respiratory or skin sensitization Skin: Beuhler Test: guinea pig; negative (OECD Test Guideline 406)
Germ cell mutagenicity No data available
Carcinogenicity
IARC No data available
NTP No data available
OSHA No data available
Reproductive toxicity
(Including teratogenicity)
STOT-single exposure No data available
STOT-repeated exposure No data available
Aspiration hazard No data available
RTECS Number AL7700000

11.2 Further Information
Potential health effects
Eye Can cause serious irritation to eyes and mucous membranes. Lachrymator.
Skin Can cause irritation, dryness, and local short-term, reversible damage to skin.
Inhalation May cause respiratory irritation. Extremely destructive to mucous membranes of the upper respiratory tract.
Symptoms: coughing, shortness of breath, difficulty breathing, headache.
Ingestion May be harmful if in contact with mucous membranes of the GI system.
Symptoms See above route. Pre-existing conditions that may be aggravated: not determined.
Miscellaneous No data available.

SECTION 12 ............................................................  ECOLOGICAL INFORMATION.................................................................................

12.1 Ecotoxicity
Toxicity to fish Pimephales promelas (fathead minnow) LC50 > 100 mg/L – 96h.
Toxicity to daphnia and other aquatic invertebrates Daphnia magna (water flea) EC50 3,600 mg/L – 48h. (OECD Test Guideline 202)
12.2 Persistence and degradability
No data available for this product.

12.3 Bioaccumulative potential
BCF = 3.0 (calc., Lit).
Partition coefficient: N-octanol/water log Pow = -0.34; Bioaccumulation not expected. (IUCLID)

12.4 Mobility in soil
Log Koc = 1.21; Mobile in soils (Lit.)

12.5 Other adverse effects
No data available

SECTION 13 ........................................................... DISPOSAL CONSIDERATIONS ........................................................... DISPOSAL CONSIDERATIONS

13.1 Disposal methods
U. S. EPA Waste Codes U003, D001
Waste Characterization: RCRA Hazard Class (40CFR 261): Ignitable (I), Toxic (T)
Generator is responsible for proper waste characterization. NOTE: U. S. Federal and state hazardous waste regulations may differ considerably.

Special note: Material can be reacted in alkaline hypochlorite solution to produce cyanate and then neutralized.

Waste Disposal
That which cannot be recovered or recycled, should be disposed of in accordance with all applicable international, national, regional, state, and local laws. Do NOT dump into any sewer, on ground, or into any body of water.

SECTION 14 ........................................................... TRANSPORT INFORMATION ........................................................... TRANSPORT INFORMATION

14.1 DOT (US)
UN Number: 2924 Class: 3 Packing Group: II
Proper shipping name: Acetonitrile
Reportable Quantity (RQ): 5000 lbs Marine pollutant: No

14.2 IATA
UN Number: 2924 Class: 3 Packing Group: II
Proper shipping name: Acetonitrile

14.3 IMDG
UN Number: 2924 Class: 3 Packing Group: II
Proper shipping name: ACETONITRILE
Marine pollutant: No

SECTION 15 ........................................................... REGULATORY INFORMATION ........................................................... REGULATORY INFORMATION

15.1 Safety, health and Environmental regulations specific for the product in question.
NFPA: H2 F3 R0 HMIS: H2 F3 R0

15.2 Chemical Inventory Lists

Acetonitrile
CAS Number: 75-05-8
TSCA: Y
EINECS: Y
Number: 200-835-2
CERCLA [Section 103 (40 CFR 302.4)]: Y
RQ (lbs) 5,000
RCRA Waste Code: U003
TQ (lbs): NA

State Lists:
States: Listed on MA, NJ, PA
On CA 65 Significant Risk Level: NL

Some abbreviations used throughout this MSDS: NA=not applicable; NE=not established; U=unknown/unavailable; NL=not listed; N=no; Y=yes.
15.2 Chemical Inventory Lists

Acetonitrile

CAS Number: 75-05-8

Clean Air Act

[Section 112r (40 CFR 68)]: NL
TQ (lbs) NA
Contains Ozone Depleters (Class I or Class II): N
[Section 103 (40 CFR 302.4)]: NL

SARA Title III Notification [40 CFR 302.4]:

Section 302/304 (EHS) Ingredient [40 CFR 355.3]: NL
TPO (lbs) NA
RQ (lbs) NA

Section 313 Ingredients [40 CFR 372.65]: Y

SARA Hazards
Acute.....Y Chronic.....Y Fire.....Y Pressure.....N Reactivity.....N

SECTION 16

OTHER INFORMATION

16.1 Full test of H-Statements referred to under Section 2 and 3.

Acute Tox. Acute Toxicity
Eye Irr. Eye Irritant
Flam. Liq. Flammable liquids
H225 Highly flammable liquid and vapor.
H312 Harmful in contact with skin
H315 Harmful if swallowed
H319 Causes severe eye irritation
H332 Harmful if inhaled

The above information is believed to be correct to the best of our present state knowledge, but does not purport to be all-inclusive and shall be used only as a guide. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.

Prepared by: Regis Technologies

This is the last page of this MSDS.