



# Fisher Scientific

Part of Thermo Fisher Scientific

## SAFETY DATA SHEET

Creation Date 16-Jun-2009

Revision Date 24-Aug-2016

Revision Number 2

### 1. Identification

**Product Name** Acetonitrile

**Cat No. :** A21-1; A21-4; A21-20; A21-200; A21-200LC; A21FB-19; A21FB-50; A21FB-115; A21FB-200; A21RB-115; A21RS-19; A21RS-28; A21RS-50; A21RS-115; A21RS-200; A955; A955-1; A955-4; A955-212; A955-500; A993-1; A993RS-19; A996-1; A996-4; A996-4LC; A996N2-19; A996RS-28; A996RS-50; A996RS-115; A996RS-200; A996SK-4; A996SS-19; A996SS-28; A996SS-50; A996SS-115; A996SS-200; A997-1; A997-4; A997-212; A997SK1; A997SK4; A998-1; A998-4; A998-4LC; A998-18; A998-212; A998N1-19; A998N2-19; A998POP-50; A998RS-19; A998RS-28; A998RS-50; A998RS-115; A998RS-200; A998SK-1; A998SK-4; A998SS-28; A998SS-50; A998SS-115; A998SS-200; A999-4; BP1165-50; BP1170-4; BP1170-450; BP1170-450LC; BP1170N1-19; BP1170N2-19; BP1170POP-20; BP1170POP-50; BP1170POP-200; BP1170RS-19; BP1170RS-28; BP1170RS-50; BP1170RS-115; BP1170RS-200; BP1170RS-1350; BP1170SS-50; BP1170SS-115; BP1170SS-200; BP1170SS-1350; BP2405-1; BP2405SK-1; BP2405SK-4; BP2600-100; LCMSKIT; OPTIMAKIT; XXA21ETNP200LI; NC1225777

**Synonyms** Methyl cyanide; Ethanenitrile  
(Anhydrous/Certified ACS/HPLC/Pesticide/Septum-Sealed/DNA Synthesis/OPTIMA LC/MS)

**Recommended Use** Laboratory chemicals.

**Uses advised against** No Information available

**Details of the supplier of the safety data sheet**

**Company**  
Fisher Scientific  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

**Emergency Telephone Number**  
CHEMTREC®, Inside the USA: 800-424-9300  
CHEMTREC®, Outside the USA: 001-703-527-3887

### 2. Hazard(s) identification

#### **Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|                                    |            |
|------------------------------------|------------|
| Flammable liquids                  | Category 2 |
| Acute oral toxicity                | Category 4 |
| Acute dermal toxicity              | Category 4 |
| Acute Inhalation Toxicity - Vapors | Category 4 |
| Serious Eye Damage/Eye Irritation  | Category 2 |

**Label Elements****Signal Word**

Danger

**Hazard Statements**

Highly flammable liquid and vapor

Harmful if swallowed

Harmful in contact with skin

Causes serious eye irritation

Harmful if inhaled

**Precautionary Statements****Prevention**

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Wear protective gloves/protective clothing/eye protection/face protection

Use only outdoors or in a well-ventilated area

Do not breathe dust/fume/gas/mist/vapors/spray

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

**Response**

Get medical attention/advice if you feel unwell

**Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Call a POISON CENTER or doctor/physician if you feel unwell

**Skin**

Call a POISON CENTER or doctor/physician if you feel unwell

Wash contaminated clothing before reuse

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

**Eyes**

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

**Ingestion**

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

**Fire**In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction**Storage**

Store in a well-ventilated place. Keep cool

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

None identified

**3. Composition / information on ingredients**

| Component    | CAS-No  | Weight % |
|--------------|---------|----------|
| Acetonitrile | 75-05-8 | >95      |

**4. First-aid measures**

|                                        |                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General Advice</b>                  | Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.                                                                                                                                                                                                                                                                  |
| <b>Eye Contact</b>                     | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.                                                                                                                                                                                                                                  |
| <b>Skin Contact</b>                    | Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.                                                                                                                                                                                                                                                        |
| <b>Inhalation</b>                      | Move to fresh air. If breathing is irregular or stopped, administer artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.             |
| <b>Ingestion</b>                       | Do not induce vomiting. Call a physician or Poison Control Center immediately.                                                                                                                                                                                                                                                                                     |
| <b>Most important symptoms/effects</b> | Breathing difficulties. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Metabolism may release cyanide, which may result in headache, dizziness, weakness, collapse, unconsciousness, and possible death: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting |
| <b>Notes to Physician</b>              | Treat symptomatically                                                                                                                                                                                                                                                                                                                                              |

**5. Fire-fighting measures**

|                                         |                                                                                                                                         |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Suitable Extinguishing Media</b>     | Water spray. CO <sub>2</sub> , dry chemical, dry sand, alcohol-resistant foam. Cool closed containers exposed to fire with water spray. |
| <b>Unsuitable Extinguishing Media</b>   | Water may be ineffective, Do not use a solid water stream as it may scatter and spread fire                                             |
| <b>Flash Point</b>                      | 12.8 °C / 55 °F                                                                                                                         |
| <b>Method -</b>                         | No information available                                                                                                                |
| <b>Autoignition Temperature</b>         | 525 °C / 977 °F                                                                                                                         |
| <b>Explosion Limits</b>                 |                                                                                                                                         |
| <b>Upper</b>                            | 16 vol %                                                                                                                                |
| <b>Lower</b>                            | 3 vol %                                                                                                                                 |
| <b>Oxidizing Properties</b>             | Not oxidising                                                                                                                           |
| <b>Sensitivity to Mechanical Impact</b> | No information available                                                                                                                |
| <b>Sensitivity to Static Discharge</b>  | No information available                                                                                                                |

**Specific Hazards Arising from the Chemical**

Flammable. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Vapors may form explosive mixtures with air.

**Hazardous Combustion Products**

Hydrogen cyanide (hydrocyanic acid) Nitrogen oxides (NO<sub>x</sub>) Carbon monoxide (CO) Carbon dioxide (CO<sub>2</sub>)

**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. Thermal decomposition can lead to release of irritating gases and vapors.

**NFPA**

**Health**  
2

**Flammability**  
3

**Instability**  
0

**Physical hazards**  
N/A

**6. Accidental release measures****Personal Precautions**

Remove all sources of ignition. Take precautionary measures against static discharges. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Use personal protective equipment.

**Environmental Precautions**

Should not be released into the environment. See Section 12 for additional ecological information.

**Methods for Containment and Clean Up**

Remove all sources of ignition. Take precautionary measures against static discharges. Provide adequate ventilation. Use spark-proof tools and explosion-proof equipment. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Prevent product from entering drains.

**7. Handling and storage****Handling**

Wear personal protective equipment. Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Do not get in eyes, on skin, or on clothing. Do not breathe vapors or spray mist. Use spark-proof tools and explosion-proof equipment. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

**Storage**

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Flammables area.

**8. Exposure controls / personal protection****Exposure Guidelines**

| Component    | ACGIH TLV           | OSHA PEL                                                                                                                                                                                                          | NIOSH IDLH                                                                           |
|--------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Acetonitrile | TWA: 20 ppm<br>Skin | (Vacated) TWA: 40 ppm<br>(Vacated) TWA: 70 mg/m <sup>3</sup><br>(Vacated) TWA: 5 mg/m <sup>3</sup><br>(Vacated) STEL: 60 ppm<br>(Vacated) STEL: 105 mg/m <sup>3</sup><br>TWA: 40 ppm<br>TWA: 70 mg/m <sup>3</sup> | IDLH: 500 ppm IDLH: 25 mg/m <sup>3</sup><br>TWA: 20 ppm<br>TWA: 34 mg/m <sup>3</sup> |

| Component    | Quebec                                                                                                                                              | Mexico OEL (TWA)                                                                                                 | Ontario TWA EV      |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|---------------------|
| Acetonitrile | TWA: 40 ppm<br>TWA: 67 mg/m <sup>3</sup><br>STEL: 60 ppm<br>STEL: 101 mg/m <sup>3</sup><br>Ceiling: 10 ppm<br>Ceiling: 11 mg/m <sup>3</sup><br>Skin | TWA: 40 ppm<br>TWA: 70 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup><br>STEL: 60 ppm<br>STEL: 105 mg/m <sup>3</sup> | TWA: 20 ppm<br>Skin |

**Legend**

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

**Engineering Measures**

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof

electrical/ventilating/lighting/equipment.

### Personal Protective Equipment

|                                 |                                                                                                                                                                                                                                                   |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye/face Protection</b>      | Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.                                                                       |
| <b>Skin and body protection</b> | Wear appropriate protective gloves and clothing to prevent skin exposure.                                                                                                                                                                         |
| <b>Respiratory Protection</b>   | Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. |
| <b>Hygiene Measures</b>         | When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing.                                                                                                                                            |

## 9. Physical and chemical properties

|                                               |                                          |
|-----------------------------------------------|------------------------------------------|
| <b>Physical State</b>                         | Liquid                                   |
| <b>Appearance</b>                             | Colorless                                |
| <b>Odor</b>                                   | aromatic                                 |
| <b>Odor Threshold</b>                         | 170 ppm                                  |
| <b>pH</b>                                     | No information available                 |
| <b>Melting Point/Range</b>                    | -46 °C / -50.8 °F                        |
| <b>Boiling Point/Range</b>                    | 81 - 82 °C / 177.8 - 179.6 °F @ 760 mmHg |
| <b>Flash Point</b>                            | 12.8 °C / 55 °F                          |
| <b>Evaporation Rate</b>                       | 5.79                                     |
| <b>Flammability (solid,gas)</b>               | Not applicable                           |
| <b>Flammability or explosive limits</b>       |                                          |
| Upper                                         | 16 vol %                                 |
| Lower                                         | 3 vol %                                  |
| <b>Vapor Pressure</b>                         | 97 mbar @ 20 °C                          |
| <b>Vapor Density</b>                          | 1.42                                     |
| <b>Specific Gravity</b>                       | 0.781                                    |
| <b>Solubility</b>                             | miscible                                 |
| <b>Partition coefficient; n-octanol/water</b> | No data available                        |
| <b>Autoignition Temperature</b>               | 525 °C / 977 °F                          |
| <b>Decomposition Temperature</b>              | No information available                 |
| <b>Viscosity</b>                              | 0.36 cP at 20 °C                         |
| <b>Molecular Formula</b>                      | C <sub>2</sub> H <sub>3</sub> N          |
| <b>Molecular Weight</b>                       | 41.05                                    |

## 10. Stability and reactivity

|                                         |                                                                                                                                  |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>Reactive Hazard</b>                  | None known, based on information available                                                                                       |
| <b>Stability</b>                        | Stable under normal conditions.                                                                                                  |
| <b>Conditions to Avoid</b>              | Incompatible products. Keep away from open flames, hot surfaces and sources of ignition. Exposure to moisture.                   |
| <b>Incompatible Materials</b>           | Strong oxidizing agents, Strong acids, Reducing agents, Bases                                                                    |
| <b>Hazardous Decomposition Products</b> | Hydrogen cyanide (hydrocyanic acid), Nitrogen oxides (NO <sub>x</sub> ), Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ) |
| <b>Hazardous Polymerization</b>         | Hazardous polymerization does not occur.                                                                                         |
| <b>Hazardous Reactions</b>              | None under normal processing.                                                                                                    |

## 11. Toxicological information

### Acute Toxicity

#### Product Information Component Information

| Component    | LD50 Oral                                                    | LD50 Dermal             | LC50 Inhalation                        |
|--------------|--------------------------------------------------------------|-------------------------|----------------------------------------|
| Acetonitrile | ATE = 617 mg/kg<br>450-787 mg/kg (Rat)<br>2460 mg/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) | ATE = 3587 ppm<br>7551 ppm ( Rat ) 8 h |

**Toxicologically Synergistic Products** No information available

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Irritation** Irritating to eyes

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component    | CAS-No  | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|--------------|---------|------------|------------|------------|------------|------------|
| Acetonitrile | 75-05-8 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** None known

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Metabolism may release cyanide, which may result in headache, dizziness, weakness, collapse, unconsciousness, and possible death: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

| Component    | Freshwater Algae | Freshwater Fish                                                                                                                                                                                                                     | Microtox                                                               | Water Flea                             |
|--------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|----------------------------------------|
| Acetonitrile | Not listed       | LC50: = 1650 mg/L, 96h static (Poecilia reticulata)<br>LC50: = 1850 mg/L, 96h static (Lepomis macrochirus)<br>LC50: = 1000 mg/L, 96h static (Pimephales promelas)<br>LC50: 1600 - 1690 mg/L, 96h flow-through (Pimephales promelas) | EC50 = 28000 mg/L 48 h<br>EC50 = 73 mg/L 24 h<br>EC50 = 7500 mg/L 15 h | EC50: = 5838 mg/L, 18h (Daphnia pulex) |

**Persistence and Degradability** Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its volatility.

| Component    | log Pow |
|--------------|---------|
| Acetonitrile | -0.34   |

### 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

| Component              | RCRA - U Series Wastes | RCRA - P Series Wastes |
|------------------------|------------------------|------------------------|
| Acetonitrile - 75-05-8 | U003                   | -                      |

### 14. Transport information

#### DOT

UN-No UN1648  
 Proper Shipping Name ACETONITRILE  
 Hazard Class 3  
 Packing Group II

#### TDG

UN-No UN1648  
 Proper Shipping Name ACETONITRILE  
 Hazard Class 3  
 Packing Group II

#### IATA

UN-No UN1648  
 Proper Shipping Name ACETONITRILE  
 Hazard Class 3  
 Packing Group II

#### IMDG/IMO

UN-No UN1648  
 Proper Shipping Name ACETONITRILE  
 Hazard Class 3  
 Packing Group II

### 15. Regulatory information

All of the components in the product are on the following Inventory lists: X = listed

#### International Inventories

| Component    | TSCA | DSL | NDSL | EINECS    | ELINCS | NLP | PICCS | ENCS | AICS | IECSC | KECL |
|--------------|------|-----|------|-----------|--------|-----|-------|------|------|-------|------|
| Acetonitrile | X    | X   | -    | 200-835-2 | -      |     | X     | X    | X    | X     | X    |

#### Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

#### U.S. Federal Regulations

## TSCA 12(b)

## SARA 313

| Component    | CAS-No  | Weight % | SARA 313 - Threshold Values % |
|--------------|---------|----------|-------------------------------|
| Acetonitrile | 75-05-8 | >95      | 1.0                           |

## SARA 311/312 Hazard Categories

|                                   |     |
|-----------------------------------|-----|
| Acute Health Hazard               | Yes |
| Chronic Health Hazard             | Yes |
| Fire Hazard                       | Yes |
| Sudden Release of Pressure Hazard | No  |
| Reactive Hazard                   | No  |

## CWA (Clean Water Act)

| Component    | CWA - Hazardous Substances | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants |
|--------------|----------------------------|-----------------------------|------------------------|---------------------------|
| Acetonitrile | -                          | -                           | X                      | X                         |

## Clean Air Act

| Component    | HAPS Data | Class 1 Ozone Depletors | Class 2 Ozone Depletors |
|--------------|-----------|-------------------------|-------------------------|
| Acetonitrile | X         |                         | -                       |

## OSHA Occupational Safety and Health Administration

Not applicable

## CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

| Component    | Hazardous Substances RQs | CERCLA EHS RQs |
|--------------|--------------------------|----------------|
| Acetonitrile | 5000 lb                  | -              |

## California Proposition 65

This product does not contain any Proposition 65 chemicals

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

| Component    | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|--------------|---------------|------------|--------------|----------|--------------|
| Acetonitrile | X             | X          | X            | X        | X            |

## U.S. Department of Transportation

|                             |   |
|-----------------------------|---|
| Reportable Quantity (RQ):   | N |
| DOT Marine Pollutant        | N |
| DOT Severe Marine Pollutant | N |

## U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

## Other International Regulations

## Mexico - Grade

Serious risk, Grade 3

## Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

## WHMIS Hazard Class

B2 Flammable liquid  
D1A Very toxic materials  
D2B Toxic materials





## 16. Other information

**Prepared By**

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**Revision Summary**

This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

**Disclaimer**

The information provided in this 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 SDS**