

**SAFETY DATA SHEET**

according to the Global Harmonized System (and with all of the information required by the HPR)

Revision Date 06/14/2018

Version 1.5

**SECTION 1. Identification****Product identifier**

|                |                                               |
|----------------|-----------------------------------------------|
| Product number | 100029                                        |
| Product name   | Acetonitrile hypergrade for LC-MS LiChrosolv® |
| Synonyms       | ACN                                           |
| CAS-No.        | 75-05-8                                       |

**Relevant identified uses of the substance or mixture and uses advised against**

|                 |                      |
|-----------------|----------------------|
| Identified uses | Reagent for analysis |
|-----------------|----------------------|

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

|         |                                                                                                                                                                                                                                                                     |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Company | Millipore (Canada) Ltd   109 Woodbine Downs Blvd. Unit 5   Etobicoke   Ontario M9W 6Y1   Canada   General Inquiries: +1 800-645-5476   Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)<br>MilliporeSigma is a business of Merck KGaA, Darmstadt, Germany. |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                            |                                                                                                      |
|----------------------------|------------------------------------------------------------------------------------------------------|
| <b>Emergency telephone</b> | 800-424-9300 CHEMTREC (USA)<br>+1-703-527-3887 CHEMTREC (International)<br>24 Hours/day; 7 Days/week |
|----------------------------|------------------------------------------------------------------------------------------------------|

**SECTION 2. Hazards identification****GHS Classification**

Flammable liquid, Category 2, H225  
Acute toxicity, Category 4, Oral, H302  
Acute toxicity, Category 4, Inhalation, H332  
Acute toxicity, Category 4, Dermal, H312  
Eye irritation, Category 2A, H319

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

**GHS-Labeling**

*Hazard pictograms*



*Signal Word*  
Danger

*Hazard Statements*  
H225 Highly flammable liquid and vapor.

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H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.

H319 Causes serious eye irritation.

### *Precautionary Statements*

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.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing.

Rinse skin with water/ shower.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P312 Call a POISON CENTER/doctor if you feel unwell.

P322 Specific measures (see supplemental first aid instructions on this label).

P330 Rinse mouth.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P363 Wash contaminated clothing before reuse.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

P403 + P235 Store in a well-ventilated place. Keep cool.

P501 Dispose of contents/ container to an approved waste disposal plant.

### **Other hazards**

None known.

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### **SECTION 3. Composition/information on ingredients**

|            |                    |                                        |
|------------|--------------------|----------------------------------------|
| Formula    | CH <sub>3</sub> CN | C <sub>2</sub> H <sub>3</sub> N (Hill) |
| Synonyms   | ACN                |                                        |
| Molar mass | 41.05 g/mol        |                                        |

### **Hazardous ingredients**

*Chemical name (Concentration)*

CAS-No.

*acetonitrile (>= 90 % - <= 100 %)*

75-05-8

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### **SECTION 4. First aid measures**

#### **Description of first-aid measures**

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### *General advice*

First aider needs to protect himself.

### *Inhalation*

After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration. Oxygen if necessary. Immediately call in physician.

### *Skin contact*

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

### *Eye contact*

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

### *Ingestion*

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

### **Most important symptoms and effects, both acute and delayed**

May cause headache and dizziness.

The following applies to cyanogen compounds/ nitriles in general: utmost caution! Release of hydrocyanic acid is possible - blockade of cellular respiration. Cardiovascular disorders, dyspnoea, unconsciousness.

irritant effects, Nausea, Vomiting, Convulsions, Shortness of breath, respiratory arrest, cardiac arrest, Unconsciousness

### **Indication of any immediate medical attention and special treatment needed**

No information available.

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## **SECTION 5. Fire-fighting measures**

### **Extinguishing media**

#### *Suitable extinguishing media*

Water, Foam, Carbon dioxide (CO<sub>2</sub>), Dry powder

#### *Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

### **Special hazards arising from the substance or mixture**

Combustible.

Pay attention to flashback.

Forms explosive mixtures with air at ambient temperatures.

Vapors are heavier than air and may spread along floors.

Development of hazardous combustion gases or vapors possible in the event of fire.

Fire may cause evolution of:

nitrogen oxides, Hydrogen cyanide (hydrocyanic acid)

### **Advice for firefighters**

#### *Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

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### *Further information*

Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## **SECTION 6. Accidental release measures**

### **Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

### **Environmental precautions**

Do not let product enter drains. Risk of explosion.

### **Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

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## **SECTION 7. Handling and storage**

### **Precautions for safe handling**

Observe label precautions.

Work under hood. Do not inhale substance/mixture. Avoid generation of vapors/aerosols.

### *Advice on protection against fire and explosion*

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

### **Conditions for safe storage, including any incompatibilities**

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

Store at +5°C to +30°C (+41°F to +86°F).

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## SECTION 8. Exposure controls/personal protection

### Exposure limit(s)

#### Ingredients

| Basis                       | Value                                               | Threshold limits                | Remarks                           |
|-----------------------------|-----------------------------------------------------|---------------------------------|-----------------------------------|
| <i>acetonitrile 75-05-8</i> |                                                     |                                 |                                   |
| CAD AB OEL                  | Time Weighted Average (TWA):                        | 20 ppm<br>34 mg/m <sup>3</sup>  |                                   |
| CAD BC OEL                  | Skin designation:                                   |                                 | Can be absorbed through the skin. |
|                             | Time Weighted Average (TWA):                        | 20 ppm                          |                                   |
| CAD MB OEL                  | Time Weighted Average (TWA):<br>Skin designation:   | 20 ppm                          | Can be absorbed through the skin. |
| CAD ON OEL                  | Time Weighted Average (TWAEV):<br>Skin designation: | 20 ppm                          | Can be absorbed through the skin. |
| OEL (QUE)                   | Time Weighted Average (TWA):                        | 40 ppm<br>67 mg/m <sup>3</sup>  |                                   |
|                             | Short Term Exposure Limit (STEL):                   | 60 ppm<br>101 mg/m <sup>3</sup> |                                   |

### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

### Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

### Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

### Eye/face protection

Safety glasses

### Hand protection

full contact:

Glove material: butyl-rubber  
Glove thickness: 0.7 mm  
Break through time: > 480 min

splash contact:

Glove material: polychloroprene  
Glove thickness: 0.65 mm  
Break through time: > 30 min

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The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 898 Butoject® (full contact), KCL 720 Camapren® (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

*Other protective equipment:*

Flame retardant antistatic protective clothing.

*Respiratory protection*

required when vapors/aerosols are generated.

Recommended Filter type: Filter A (acc. to DIN 3181) for vapors of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are performed according to the instructions of the producer. These measures have to be properly documented.

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## SECTION 9. Physical and chemical properties

|                             |                                    |
|-----------------------------|------------------------------------|
| Physical state              | liquid                             |
| Color                       | colorless                          |
| Odor                        | ether-like                         |
| Odor Threshold              | 39.8 ppm                           |
| pH                          | No information available.          |
| Melting point               | -50.3 °F (-45.7 °C)                |
| Boiling point/boiling range | 178.9 °F (81.6 °C)<br>at 1,013 hPa |
| Flash point                 | 36 °F (2 °C)<br>Method: c.c.       |
| Evaporation rate            | No information available.          |
| Flammability (solid, gas)   | No information available.          |
| Lower explosion limit       | 3.0 %(V)                           |
| Upper explosion limit       | 17 %(V)                            |
| Vapor pressure              | 97 hPa<br>at 68 °F (20 °C)         |

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|                                        |                                                             |
|----------------------------------------|-------------------------------------------------------------|
| Relative vapor density                 | 1.42                                                        |
| Density                                | 0.786 g/cm <sup>3</sup><br>at 68 °F (20 °C)                 |
| Relative density                       | No information available.                                   |
| Water solubility                       | at 68 °F (20 °C)<br>soluble                                 |
| Partition coefficient: n-octanol/water | log Pow: -0.34<br>(IUCRID) Bioaccumulation is not expected. |
| Autoignition temperature               | No information available.                                   |
| Decomposition temperature              | Distillable in an undecomposed state at normal pressure.    |
| Viscosity, dynamic                     | 0.316 mPa.s<br>at 77 °F (25 °C)                             |
| Explosive properties                   | Not classified as explosive.                                |
| Oxidizing properties                   | none                                                        |
| Ignition temperature                   | 975 °F (524 °C)                                             |

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## SECTION 10. Stability and reactivity

### Reactivity

Vapors may form explosive mixture with air.

### Chemical stability

heat-sensitive

Distillable in an undecomposed state at normal pressure.

### Possibility of hazardous reactions

Violent reactions possible with:

Strong bases, strong reducing agents

Risk of explosion with:

nitrates, perchlorates, perchloric acid

conc. sulfuric acid, with, Heat.

Risk of ignition or formation of inflammable gases or vapors with:

Oxidizing agents, Nitric acid

nitrogen dioxide, with, Catalyst

Generates dangerous gases or fumes in contact with:

Acids

### Conditions to avoid

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Warming.

## Incompatible materials

rubber, various plastics

## Hazardous decomposition products

in the event of fire: See section 5.

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## SECTION 11. Toxicological information

### Information on toxicological effects

#### *Likely route of exposure*

Inhalation, Eye contact, Skin contact

#### *Acute oral toxicity*

LD50 Mouse: 617 mg/kg

OECD Test Guideline 401

Symptoms: Nausea, Vomiting

#### *Acute inhalation toxicity*

Symptoms: Possible damages:, mucosal irritations

#### *Skin irritation*

Rabbit

Result: No skin irritation

OECD Test Guideline 404

#### *Eye irritation*

Rabbit

Result: Eye irritation

OECD Test Guideline 405

Causes serious eye irritation.

#### *Sensitization*

Buehler Test Guinea pig

Result: negative

Method: OECD Test Guideline 406

#### *Genotoxicity in vivo*

In vivo micronucleus test

Mouse

Result: negative

Method: OECD Test Guideline 474

#### *Genotoxicity in vitro*

Ames test

Salmonella typhimurium

Result: negative

(External MSDS)



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Mutagenicity (mammal cell test):

MOUSE LYMPHOMA TEST

Result: negative

Method: OECD Test Guideline 476

*Specific target organ systemic toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

*Specific target organ systemic toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

*Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

### Carcinogenicity

IARC

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

### Further information

After absorption:

Systemic effects:

Shortness of breath, Headache, Dizziness, Nausea, Convulsions, respiratory arrest, cardiac arrest, Unconsciousness

Symptoms may be delayed.

The following applies to cyanogen compounds/ nitriles in general: utmost caution! Release of hydrocyanic acid is possible - blockade of cellular respiration. Cardiovascular disorders, dyspnoea, unconsciousness.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 12. Ecological information

### Ecotoxicity

*Toxicity to fish*

semi-static test LC50 *Oryzias latipes* (Orange-red killifish): > 100 mg/l; 96 h

OECD Test Guideline 203

*Toxicity to daphnia and other aquatic invertebrates*

semi-static test EC50 *Daphnia magna* (Water flea): > 1,000 mg/l; 48 h

OECD Test Guideline 202

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semi-static test NOEC Daphnia magna (Water flea): 960 mg/l; 21 d  
OECD Test Guideline 202

#### *Toxicity to algae*

static test EC50 Pseudokirchneriella subcapitata (green algae): > 1,000 mg/l; 72 h  
OECD Test Guideline 201

static test NOEC Pseudokirchneriella subcapitata (green algae): > 1,000 mg/l; 72 h  
OECD Test Guideline 201

IC5 Scenedesmus quadricauda (Green algae): 7,300 mg/l; 8 d (IUCLID) (maximum permissible toxic concentration)

#### *Toxicity to bacteria*

EC5 Pseudomonas putida: 680 mg/l; 16 h (IUCLID) (maximum permissible toxic concentration)

### **Persistence and degradability**

#### *Biodegradability*

70 %; 21 d

OECD Test Guideline 302B

Readily biodegradable.

### **Bioaccumulative potential**

#### *Partition coefficient: n-octanol/water*

log Pow: -0.34

(IUCLID) Bioaccumulation is not expected.

#### *Bioaccumulation*

Bioconcentration factor (BCF): 0.3

Lepomis macrochirus (Bluegill sunfish) (Does not significantly accumulate in organisms.)

(Information taken from reference works and the literature.)

### **Mobility in soil**

#### *Distribution among environmental compartments*

Adsorption/Soil

log Koc: 1.21

Mobile in soils (Lit.)

### **Other adverse effects**

#### *Stability in water*

DT50

> 9,999 d

at pH: 7

(calculated) Hydrolyzes slowly.

#### *Additional ecological information*

Biological effects:

Hazard for drinking water supplies.

Discharge into the environment must be avoided.

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## **SECTION 13. Disposal considerations**

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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**SECTION 14. Transport information**

**Land transport (DOT)**

UN number UN 1648  
Proper shipping name ACETONITRILE  
Class 3  
Packing group II  
Environmentally hazardous --

**Air transport (IATA)**

UN number UN 1648  
Proper shipping name ACETONITRILE  
Class 3  
Packing group II  
Environmentally hazardous --  
Special precautions for user no

**Sea transport (IMDG)**

UN number UN 1648  
Proper shipping name ACETONITRILE  
Class 3  
Packing group II  
Environmentally hazardous --  
Special precautions for user yes  
EmS F-E S-D

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**SECTION 15. Regulatory information**

**United States of America**

**Canada**

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

**Notification status**

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL

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**SECTION 16. Other information**

**Training advice**

Provide adequate information, instruction and training for operators.

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## Labeling

### Hazard pictograms



### Signal Word

Danger

### Hazard Statements

H225 Highly flammable liquid and vapor.

H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.

H319 Causes serious eye irritation.

### Precautionary Statements

#### Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P240 Ground/bond container and receiving equipment.

#### Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

#### Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

## Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

Revision Date 06/14/2018

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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