



# SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 06/12/2014

Version 1.2

## SECTION 1. Identification

### Product identifier

Product number	100030
Product name	Acetonitrile gradient grade for liquid chromatography LiChrosolv® Reag. Ph Eur
Synonyms	ACN
CAS-No.	75-05-8

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

Identified uses	Reagent for analysis, Analytical and preparative chromatography
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### Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation   290 Concord Road, Billerica, MA 01821, United States of America   General Inquiries: +1-978-715-4321   Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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## 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 2, H319

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

### GHS-Labeling

*Hazard pictograms*



*Signal Word*  
Danger

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## *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*

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P240 Ground/bond container and receiving equipment.  
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.  
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

## **OSHA Hazards**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS and may deviate from the GHS information.

## **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

Exact percentages are being withheld as a trade secret.

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

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

#### *Inhalation*

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

#### *Skin contact*

After skin contact: wash off with plenty of water. Remove contaminated clothing. Get medical attention.

#### *Eye contact*

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

#### *Ingestion*

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

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Never give anything by mouth to an unconscious person.

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

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

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.

### **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, Carbon dioxide (CO<sub>2</sub>), Foam, 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.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at ambient temperatures.

Pay attention to flashback.

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.

*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. Keep away from heat and sources of ignition. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

### **Environmental precautions**

Do not empty into drains. Risk of explosion.

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

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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. Chemisorb®). Dispose of properly. Clean up affected area.

## SECTION 7. Handling and storage

### Precautions for safe handling

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

Observe label precautions.

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

Store at +15°C to +25°C (+59°F to +77°F).

## SECTION 8. Exposure controls/personal protection

### Exposure limit(s)

#### *Ingredients*

Basis	Value	Threshold limits	Remarks
<i>acetonitrile 75-05-8</i>			
ACGIH	Time Weighted Average (TWA): Skin designation:	20 ppm	Can be absorbed through the skin.
NIOSH/GUIDE	Recommended exposure limit (REL):	20 ppm 34 mg/m <sup>3</sup>	
OSHA_TRANS	PEL:	40 ppm 70 mg/m <sup>3</sup>	
Z1A	Time Weighted Average (TWA):	40 ppm 70 mg/m <sup>3</sup>	
	Short Term Exposure Limit (STEL):	60 ppm 105 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.

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### *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*

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

### *Other protective equipment:*

Flame retardant antistatic protective clothing

### *Respiratory protection*

required when vapors/aerosols are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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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	-45.7 °C
Boiling point/boiling range	178.9 °F ( 81.6 °C) at 1,013 hPa
Flash point	36 °F ( 2 °C) 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 at 68 °F ( 20 °C)
Relative vapor density	1.42

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Density	0.786 g/cm <sup>3</sup> at 68 °F ( 20 °C)
Relative density	No information available.
Water solubility	at 68 °F ( 20 °C) soluble
Partition coefficient: n-octanol/water	log Pow: -0.34 (IUCLID) 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 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

Warming.

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## 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

#### *Target Organs*

Respiratory system

cardiovascular system

Central nervous system

Liver

Kidneys

#### *Acute oral toxicity*

LD50 mouse: 617 mg/kg

OECD Test Guideline 401

absorption

Symptoms: Nausea, Vomiting

#### *Acute inhalation toxicity*

LC50 mouse: 6.022 mg/l; 4 h

OECD Test Guideline 403

absorption

#### *Acute dermal toxicity*

LD50 rabbit: > 2,000 mg/kg

OECD Test Guideline 402

(Regulation (EC) No 1272/2008, Annex VI)

absorption

#### *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

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## *Repeated dose toxicity*

(External MSDS)

## *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)

Mutagenicity (mammal cell test):

MOUSE LYMPHOMA TEST

Result: negative

Method: OECD Test Guideline 476

## *CMR effects*

Carcinogenicity:

Regarding the available data the classification criteria are not fulfilled.

Mutagenicity:

Regarding the available data the classification criteria are not fulfilled.

Teratogenicity:

Regarding the available data the classification criteria are not fulfilled.

Reproductive toxicity:

Regarding the available data the classification criteria are not fulfilled.

## *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 ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
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



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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, Unconsciousness, respiratory arrest, cardiac arrest

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.

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

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.)

### Mobility in soil

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## *Distribution among environmental compartments*

Adsorption/Soil

log K<sub>oc</sub>: 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.

Further information on ecology

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)**

<b>UN number</b>	UN 1648
<b>Proper shipping name</b>	ACETONITRILE
<b>Class</b>	3
<b>Packing group</b>	II
<b>Environmentally hazardous</b>	--

### **Air transport (IATA)**

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

### **Sea transport (IMDG)**

<b>UN number</b>	UN 1648
<b>Proper shipping name</b>	ACETONITRILE
<b>Class</b>	3
<b>Packing group</b>	II

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<b>Environmentally hazardous</b>	--
<b>Special precautions for user</b>	yes
EmS	F-E S-D

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## SECTION 15. Regulatory information

### United States of America

#### OSHA Hazards

Flammable Liquid  
Harmful if swallowed.  
Eye irritant  
Target organ effects  
Harmful by skin absorption.  
Harmful if inhaled.

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

#### SARA 311/312 Hazards

Fire Hazard  
Acute Health Hazard  
Chronic Health Hazard

#### SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

##### *Ingredients*

acetonitrile	75-05-8	100 %
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#### SARA 302

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

#### DEA List I

Not listed

#### DEA List II

Not listed

### US State Regulations

#### Massachusetts Right To Know

*Ingredients*  
acetonitrile

#### Pennsylvania Right To Know

*Ingredients*  
acetonitrile

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## New Jersey Right To Know

### *Ingredients*

acetonitrile

## California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

## 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.

### Full text of H-Statements referred to under sections 2 and 3.

H225	Highly flammable liquid and vapor.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.

### 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 06/12/2014

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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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