SAFETY DATA SHEET

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

Revision Date 05/19/2014 Version 1.4

SECTION 1.Identification

Product identifier

Product number	100020
Product name	Acetone for liquid chromatography LiChrosolv®
CAS-No.	67-64-1

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

Identified uses	Reagent for analysis, Analytical and preparative chromatography

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

SECTION 2. Hazards identification

GHS Classification

Flammable liquid, Category 2, H225
Eye irritation, Category 2, H319
Specific target organ systemic toxicity - single exposure, Category 3, H336

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.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

Precautionary Statements
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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.

SECTION 3. Composition/information on ingredients

Formula	CH_3COCH_3	C_3H_6O (Hill)
Molar mass	58.08 g/mol	

Hazardous ingredients
Chemical Name (Concentration)
CAS-No.
acetone (>= 90 % - <= 100 %)
67-64-1

Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

Description of first-aid measures

Inhalation
After inhalation: fresh air. Call in physician.

Skin contact
After skin contact: wash off with plenty of water. Remove contaminated clothing.

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

Ingestion
After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed
irritant effects, Drowsiness, Dizziness, narcosis, Nausea, Vomiting, Stomach/intestinal disorders, Headache, drowziness, Salivation, Coma
Risk of corneal clouding.
Drying-out effect resulting in rough and chapped skin.

Indication of any immediate medical attention and special treatment needed
No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO2), 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.

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

Prevent fire extinguishing water from contaminating surface water or the ground water system.
Remove container from danger zone and cool with water.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapors, aerosols. 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 empty into 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.

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

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
acetone 67-64-1			
ACGIH	Time Weighted Average (TWA):	500 ppm	
	Short Term Exposure Limit (STEL):	750 ppm	
NIOSH/GUIDE	Recommended exposure limit (REL):	250 ppm 590 mg/m³	
OSHA_TRANS	PEL:	1,000 ppm 2,400 mg/m³	
Z1A	Time Weighted Average (TWA):	750 ppm 1,800 mg/m³	
	Short Term Exposure Limit (STEL):	1,000 ppm 2,400 mg/m³	

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

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.

SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	fruity
Odor Threshold	0.1 - 662.5 ppm
pH	5 - 6 at 395 g/l 68 °F (20 °C)
Melting point	-95.4 °C
Boiling point/boiling range	133.2 °F (56.2 °C) at 1,013 hPa
Flash point	< -4 °F (< -20 °C) Method: DIN 51755 Part 1
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	2.6 %(V)
Upper explosion limit	12.8 %(V)
Vapor pressure	233 hPa at 68 °F (20 °C)
Relative vapor density	2.01
Density	0.79 g/cm³ 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: -0.24 (experimental) Bioaccumulation is not expected. (Lit.)
Autoignition temperature	No information available.
Decomposition temperature	Distillable in an undecomposed state at normal pressure.

Viscosity, dynamic	0.32 mPa.s at 68 °F (20 °C)
Explosive properties	Not classified as explosive.
Oxidizing properties	none
Ignition temperature	869 °F (465 °C) DIN 51794
Conductivity	0.01 µS/cm at 68 °F (20 °C)

SECTION 10. Stability and reactivity

Reactivity

Vapors may form explosive mixture with air.

Chemical stability

Sensitivity to light
Sensitive to air.

Possibility of hazardous reactions

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

chromosulfuric acid, chromyl chloride, ethanolamine, Fluorine, Strong oxidizing agents, strong reducing agents, Nitric acid, chromium(VI) oxide

Risk of explosion with:

nonmetallic oxyhalides, halogen-halogen compounds, Chloroform, nitrating acid, nitrosyl compounds, hydrogen peroxide, halogen oxides, organic nitro compounds, peroxi compounds

Exothermic reaction with:

Bromine, Alkali metals, alkali hydroxides, Halogenated hydrocarbon, Sulfur dichloride, phosphorous oxichloride

Conditions to avoid

Warming.

Incompatible materials

rubber, various plastics

Hazardous decomposition products

no information available

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure
Inhalation, Eye contact, Skin contact

Target Organs
Eyes

Skin
Respiratory system
Central nervous system

Acute oral toxicity
LD50 rat: 5,800 mg/kg (RTECS)

Symptoms: Stomach/intestinal disorders, Risk of aspiration upon vomiting., Pulmonary failure possible after aspiration of vomit.

Acute inhalation toxicity
LC50 rat: 76 mg/l; 4 h (Lit.)

Symptoms: mucosal irritations

absorption

Acute dermal toxicity
LD50 rabbit: 20,000 mg/kg
(IUCLID)

Skin irritation
rabbit
Result: No irritation
(External MSDS)

Repeated exposure may cause skin dryness or cracking.

Possible damages: slight irritation

Eye irritation
rabbit
Result: Eye irritation
(External MSDS)

Causes serious eye irritation.

Risk of corneal clouding.

Sensitization
Sensitization test: guinea pig
Result: negative
(Lit.)

Genotoxicity in vivo
Mutagenicity (mammal cell test): micronucleus.
Result: negative
(National Toxicology Program)

Genotoxicity in vitro
Mutagenicity (mammal cell test): chromosome aberration.
Result: negative
(National Toxicology Program)

Ames test
Result: negative
(National Toxicology Program)

Carcinogenicity
Did not show carcinogenic effects in animal experiments. (IUCLID)

Specific target organ systemic toxicity - single exposure
May cause drowsiness or dizziness.

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 equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information
After absorption:
Headache, Salivation, Nausea, Vomiting, Dizziness, narcosis, Coma
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish
LC50 Oncorhynchus mykiss (rainbow trout): 5,540 mg/l; 96 h (Lit.)

Toxicity to daphnia and other aquatic invertebrates
EC50 Daphnia magna (Water flea): 6,100 mg/l; 48 h (Lit.)

EC5 E.sulcatum: 28 mg/l; 72 h (maximum permissible toxic concentration) (Lit.)

Toxicity to algae
IC5 M.aeruginosa: 530 mg/l; 8 d (maximum permissible toxic concentration) (IUCLID)

Toxicity to bacteria
EC50 activated sludge: 59 - 67.4 mg/l; 30 min (Lit.)

EC5 Pseudomonas putida: 1,700 mg/l; 16 h (maximum permissible toxic concentration) (IUCLID)

Persistence and degradability
Biodegradability
91 %; 28 d
(IUCLID)
Readily biodegradable.

Biochemical Oxygen Demand (BOD)
1,850 mg/g (5 d)
(IUCLID)

Chemical Oxygen Demand (COD)
2,070 mg/g
(IUCLID)

Theoretical oxygen demand (ThOD)
2,200 mg/g
(Lit.)

Bioaccumulative potential

Partition coefficient: n-octanol/water
log Pow: -0.24
(experimental)
Bioaccumulation is not expected. (Lit.)

Mobility in soil

No information available.

Additional ecological information
Discharge into the environment must be avoided.

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.

SECTION 14. Transport information

Land transport (DOT)

UN number	UN 1090
Proper shipping name	ACETONE
Class	3
Packing group	II
Environmentally hazardous	--

Air transport (IATA)

UN number	UN 1090
Proper shipping name	ACETONE
Class	3
Packing group	II
Environmentally hazardous	--
Special precautions for user	no

Sea transport (IMDG)

UN number	UN 1090
Proper shipping name	ACETONE
Class	3
Packing group	II
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-E S-D

SECTION 15. Regulatory information

United States of America

OSHA Hazards

Flammable Liquid
Eye irritant
Skin irritant
Respiratory irritant
Harmful if inhaled.
Harmful if swallowed.
Target organ effects

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

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

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

Listed
Ingredients

acetone	67-64-1

US State Regulations

Massachusetts Right To Know

Ingredients

acetone

Pennsylvania Right To Know

Ingredients

acetone

New Jersey Right To Know

Ingredients

acetone

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.

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.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.

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.

Revision Date 05/19/2014

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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