

CRM-00-MCLR

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/ UNDERTAKING

1.1. Product identifier

Product Name: Certified Reference Material of Microcystin LR.

Product code: CRM-00-MCLR.

Product information: Microcystin-LR in acetonitrile, 50% (v/v) aqueous solution.

UFI: RK20-20YU-300G-PJJE.

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

Identified uses: Reference material, use as a laboratory reagent in industrial settings (PROC15, ERC6a); Use of the substance within laboratory settings, including material transfers and equipment cleaning.

Uses advised against: Not for use for inclusion in final consumer products, plant protection or biocide products with wide dispersive indoor or outdoor uses.

1.3. Details of the supplier of the safety data sheet

Laboratorio CIFGA S.A.
Avd. Benigno Rivera, nº 56
27003, Lugo
Spain

Phone No. +0034 982 816 715
Web page: www.cifga.com
E-mail: info@cifga.com

1.4. Emergency telephone number

Toxicological Information Service (Instituto Nacional de Toxicología): Telephone: + 34 91 562 04 20. Information in Spanish (24h/365 days). Only for the purpose of providing an emergency health response. In case of poisoning call the Toxicological Information Service and mention the product name and code number as described in section 1.1

Company emergency telephone number: +0034 982 816 715 (Working hours: Monday to Friday from 9:00 a.m. to 3:00 p.m.).

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

This product is classified as hazardous in accordance with Regulation (EC) No. 1272/2008:

- Flammable liquid, Category 2 (H225)
- Acute toxicity, Category 4, Oral (H302)
- Acute toxicity, Category 4, Inhalation (H332)
- Acute toxicity, Category 4, Dermal (H312)
- Eye irritant, Category 2 (H319)

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

2.2. Label elements

Hazard pictograms:



Signal word: Danger

Hazard statements:

H225	Highly flammable liquid and vapour.
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, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves/protective clothing/eye protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor.
P233	Keep container tightly closed.

- *Substances in the mixture that contribute to the classification of the mixture [CLP 18(3b)]:*

Acetonitrile (CAS 75-05-8)

- *Supplemental label information:*

Not applicable

- *Notes:*

Labelled according to CLP 1.5.2.4. (Labelling of inner packaging where the contents do not exceed 10 ml).

2.3. Other hazards

The mixture is not classified as PBT or vPvB and does not contain any components considered as PBT or vPvB.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

n/a

3.2. Mixtures

Substances presenting a health or environmental hazard within the meaning of Regulation (EC) No 1272/2008; substances for which there are Union workplace exposure limits;

substances that are persistent, bioaccumulative and toxic or very persistent and very bioaccumulative; or included in the Candidate List for authorisation:

Identifiers	Name	Concentration	Classification
CAS No. 75-05-8 EC No. 200-835-2 Index No. 608-001-00-3 REACH: 01-2119471307-38-XXXX	Acetonitrile	50%	Flam. Liq. 2, H225 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Eye Irrit. 2, H319
CAS No. 101043-37-2 EC No. 621-323-9 Index No. n/a REACH: n/a	Microcystin LR	<0.1%	Acute Tox. 2 (Oral), H300 Acute Tox. 2 (Dermal), H310 Acute Tox. 2 (Inhalation), H330 Skin Irrit. 2, H315 Skin Sens. 1, H317 Eye Irrit. 2, H319 STOT SE 3, H335 Carc. 2, H351

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

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

The information on the updated composition of the product has been sent to the Toxicological Information Service (Instituto Nacional de Toxicología). In case of poisoning call the Toxicological Information Service: Telephone: (24 hours / only Spanish) +34 91 562 04 20.

Ingestion:

Thoroughly wash mouth with water and spit out. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Eye contact:

Rinse eyes with plenty of water at room temperature for at least 10 minutes. Prevent the person from rubbing or closing their eyes. If the person uses contact lenses, these should be removed as long as they are not stuck to their eyes, otherwise further damage may occur. Get medical attention

Skin contact:

Rinse skin with plenty of water. In the event of discomfort, redness or a rash, please seek medical advice and show this SDS to the emergency services.

Inhalation:

In the event of discomfort, remove the person from the place of exposure and provide fresh air while keeping them still. If the discomfort persists, seek medical care immediately and show this SDS to the emergency services.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation:

Harmful if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact:

Harmful in contact with skin.

Eye contact:

Causes serious eye irritation. Adverse symptoms may include the following: pain or irritation, watering, redness.

Ingestion:

Harmful if swallowed. Irritating to mouth, throat and stomach.

4.3. Indication of any immediate medical attention and special treatment needed

No information available, symptomatic treatment.

SECTION 5: FIREFIGHTING MEASURES

Respond according to the Emergency Plan and/or information sheets on what to do in an accident or other emergencies!

5.1. Extinguishing media

Suitable extinguishing media: Dry chemical, CO₂, water spray (fog) or foam.

Extinguishing media which shall not be used for safety reasons: IT IS NOT RECOMMENDED to use jet-sprayed water as an extinguishing agent (this may spread the fire).

5.2. Special hazards arising from the substance or mixture

Highly flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the packaging may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Hazardous decomposition products:

Decomposition products may include the following products: nitrogen oxides (NO_x), carbon monoxide (CO), carbon dioxide (CO₂), hydrogen cyanide (HCN, prussic acid).

5.3. Advice for firefighters

Fire-fighters must wear appropriate protective equipment and self-contained breathing apparatus with a full face-piece operating in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 provides a basic level of protection for chemical incidents.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel:

Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate.

Advice for emergency responders:

Avoid direct contact with the product by using appropriate personal protective equipment during all clean-up activities. Only qualified personnel equipped with suitable protective equipment may intervene (see section 8).

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Risk of explosion.

6.3. Methods and material for containment and cleaning up

Take up carefully with liquid-absorbent material. Use only non-sparking tools. Finish cleaning by spreading water on the contaminated surface and dispose of according to authority requirements. For disposal see section 13.

6.4. Reference to other sections

For personal protection, see section 8.
For waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Contributing scenario controlling worker exposure for PROC15 (laboratory reagent) and PROC8b (Transfer of substance or preparation at dedicated facilities):

Product characteristics	Process Temperature < 20 °C
Frequency and duration of use	8 hours/day
Other operational conditions affecting workers exposure	Indoor without local exhaust ventilation (LEV)
Technical conditions and measures	Provide a good standard of general ventilation.
Organisational measures to prevent /limit releases, dispersion and exposure	Covers daily exposures up to 8 hours.
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN374 (see section 8).

Additional good practice advice beyond the REACH Chemical Safety Assessment	Unpack and use in a fume cupboard with appropriate airflow (use explosion-proof ventilation equipment). Use suitable eye protection. Wear suitable coveralls to prevent exposure to the skin. Avoid contact with skin, eyes and clothes. Do not breathe vapour / mist. Immediately remove all soiled and contaminated clothing. Use only explosion-proof equipment. Take measures to prevent the build up of electrostatic charge. Take any precaution to avoid mixing with incompatible materials.
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7.2. Conditions for safe storage, including any incompatibilities

Storage of flammable liquids. Store sealed in the ampoule provided below - 15 °C (freezer).

7.3. Specific end use(s)

Use as a laboratory reagent in industrial settings (PROC15 - Use as laboratory reagent, ERC6b Industrial use of reactive processing aids): Use of small quantities within laboratory settings, including material transfers and equipment cleaning (PROC8b).

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Workplace Exposure Limits							
Country	EC	CAS	Chemical substance	OEL (8h)		OEL (15 min)	
				ppm	mg/m ³	ppm	mg/m ³
Spain[1] EU IOEL (2006)	200-835-2	75-05-8	Acetonitrile	40	68	-	-

[1] According to the Occupational Exposure Limits adopted by the Spanish National Institute of Occupational Safety and Health (INSHT) for the year 2018. Check your national OELs.

DNEL (Acetonitrile)		
Workers	Acute/long term, systemic / local effects (inhalation)	68 mg/m ³
	Long term, systemic (dermal)	32.2 mg/kg bw
PNEC (Acetonitrile)		
PNEC Fresh water		10 mg/l
PNEC Marine water		1 mg/l
PNEC Aquatic intermittent release		10 mg/l
PNEC STP		32 mg/l
PNEC Soil		3.02 mg/kg


PNEC Fresh water sediment	45 mg/kg
PNEC Marine sediment	4.5 mg/kg

8.2. Exposure controls

Engineering measures

Additional good practice advice beyond the REACH Chemical Safety Assessment: Unpack and use in a fume cupboard with appropriate air-flow (use explosion-proof ventilation equipment).

Personal protective equipment:

	
Respiratory protection:	
In case of insufficient ventilation wear suitable respiratory equipment or breathing apparatus with separate air supply. EU standards: respirator with a half face mask (EN 140), full face mask (EN 136), recommended filter type AX-organic vapours EN 141.	
Hand protection:	
PPE:	Full contact: butyl-rubber, 0.7 mm thickness, >480 min break through time. Splash contact: polychloroprene, 0.65 mm thickness, >30 min break through time.
Features:	CE marking
CEN standards:	EN 374-1, EN 374-2, EN 374-3, EN 420
Maintenance:	To be stored in a dry place away from sources of heat, and exposure to sunlight to be avoided as much as possible. Gloves shall not undergo modifications which may alter their resistance, nor shall paints, solvents or adhesives be applied.
Comments:	Gloves should be the right size and fit the hand without being too loose or too tight. They should always be used with clean, dry hands.
Eye protection:	
PPE:	Full-frame safety goggles
Features:	CE Category 3. Liquids (droplets or splashes)
CEN standards:	EN 165, EN 166, EN 167, EN 168
Maintenance:	Visibility through the lenses should be optimal, so they should be cleaned daily and shields should be disinfected regularly following the manufacturer's instructions.
Comments:	Signs of deterioration include: yellowing of the lenses, surface scratches on the lenses, cracks, etc.
Skin protection:	
PPE:	Protective clothing with antistatic properties
Features:	CE marking category II. Protective clothing should not be too tight or too loose so as not to interfere with the user's movements.
CEN standards:	EN 340, EN 1149-1, EN 1149-2, EN 1149-3, EN 1149-5

Maintenance:	Follow the washing and maintenance instructions provided by the manufacturer to ensure uniform protection.
Comments:	Protective clothing should provide a level of comfort consistent with the level of protection to be provided against the risk in question, with environmental conditions, the level of user activity and the time of intended use.
PPE:	Protective footwear
Features:	CE marking category II.
CEN standards:	EN ISO 13287, ISO 20344, EN ISO 20346
Maintenance:	Footwear should be subject to regular monitoring; if its condition is poor, it should be withdrawn from use and replaced.
Comments:	Comfort in use and acceptability are factors which are valued very differently by individuals. Therefore, different models of shoes and, if possible, different widths should be tried out.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance: liquid.
Colour: colourless.
Odour: ether-like.
pH: N/A.
Melting point: N/A.
Boiling point: 81.6 °C. NOTE: ACETONITRILE.
Flash point: 6 °C (closed cup). Note: ACETONITRILE.
Evaporation rate: N/A.
Explosion limits:
Lower: 4.4 % (Volume). Note: ACETONITRILE.
Upper: 16 % (Volume). Note: ACETONITRILE.
Vapour pressure: 94.5 hPa (20 °C). Note: ACETONITRILE.
Vapour density: 1.42. Note: ACETONITRILE.
Density: 0.9071 g/cm³ (20 °C).
Relative density: N/A.
Water solubility: Miscible.
Solubility (Other): DMSO or ethanol.
Partition coefficient: -0.34 (n-octanol/water). Note: ACETONITRILE.
Dynamic viscosity: 0,39 mPa*s (20 °C). Note: ACETONITRILE.
Kinematic viscosity: N/A.
Autoignition temperature: 455 °C (1013 hPa). Note: ACETONITRILE.
Decomposition temperature: N/A.
Explosive properties: Shall not be classified as explosive.
Oxidizing properties: N/A.

9.2. Other information

No further information available.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Flammable liquid. Vapours may form explosive mixture with air.

10.2. Chemical stability

Stable under recommended storage conditions. No decomposition if used according to specifications.

10.3. Possibility of hazardous reactions

Violent reaction with: Oxidisers, Acids, Nitric acid, Perchlorates.

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.

10.5. Incompatible materials

Incompatible with acids, oxidizing agents, alkali metals, acid chlorides, acid anhydrides or reducing agents.

10.6. Hazardous decomposition products

Nitrogen oxides, carbon monoxide, carbon dioxide and/or hydrogen cyanide. In the event of fire: see section 5.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Data are not available for the complete mixture. Following the criteria of Annex I (part 3) to Regulation 1272/2008, this product should be classified as follows:

- Flammable liquid, Category 2 (H225)
- Acute toxicity, Category 4, Oral (H302)
- Acute toxicity, Category 4, Inhalation (H332)
- Acute toxicity, Category 4, Dermal (H312)
- Eye irritant, Category 2 (H319)

Toxicological data:

Component	Content	Endpoint	Route	Value	Species
Acetonitrile	50 %	LD50	Oral	617 mg/kg	mus
		LC50*	Inhalation	6.022 mg/l	rat
		LD50*	Dermal	>2000 mg/kg	rabbit
Microcystin-LR	< 0.1 %	LD50	Intraperitoneal	11.0 mg/kg	mice

(*) According to CLP annex VI acetonitrile shall be considered as a minimum Acute Tox. 4.

- a. Acute toxicity (oral): Harmful if swallowed. ATE mix: 547.
- b. Acute toxicity (inhalation): Harmful if inhaled. Based on acetonitrile acute tox. classification, no data for Microcystin-LR.
- c. Acute toxicity (dermal): Harmful in contact with skin. Based on acetonitrile acute tox. classification, no data for Microcystin-LR.

- d. Skin corrosion / Irritation: No toxicological data available for the mixture itself, information provided by suppliers lead to non-classification of the product (no available data for Microcystin-LR).
- e. Eye damage/ irritation: Causes serious eye irritation. Based on acetonitrile classification (no available data for Microcystin-LR).
- f. Sensitization: No toxicological data available for the mixture itself, information provided by suppliers lead to non-classification of the product (no available data for Microcystin-LR).
- g. Carcinogenicity: No toxicological data available for the mixture itself, information provided by suppliers lead to non-classification of the product. No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. Microcystin-LR is possibly carcinogenic to humans (Group 2B) according to IARC.
- h. Mutagenicity: No toxicological data available for the mixture itself, information provided by suppliers lead to non-classification of the product ((no available data for Microcystin-LR).
- i. Reproductive toxicity: No toxicological data available for the mixture itself, information provided by suppliers lead to non-classification of the product (no available data for Microcystin-LR).
- j. Specific target organ toxicity - single exposure: No toxicological data available for the mixture itself, information provided by suppliers lead to non-classification of the product. Acute exposure to MCLR causes gastrointestinal and hepatic illness.
- k. Specific target organ toxicity - repeated dose: No toxicological data available for the mixture itself, information provided by suppliers lead to non-classification of the product (no available data for Microcystin-LR).
- l. Aspiration hazard: No data available.

To the best of our knowledge, the chemical, physiological and toxicological effects of this mixture have not been fully investigated. This product should be handled only by qualified experienced professionals.

Routes of Entry: It can be absorbed through skin. Eye contact. Inhalation. Ingestion.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Component	Content	Endpoint	Route	Value	Species
Acetonitrile	50 %	LC50	96 h	1640 mg/L	fish
		EC50	72 h	3560 mg / L	algae
Microcystin LR	< 0.1 %	No data available			

12.2. Persistence and degradability

Acetonitrile is readily biodegradable, no data for the mixture itself.

12.3. Bioaccumulative potential

Acetonitrile does not bioaccumulate, no data for the mixture itself.

12.4. Mobility in soil

Acetonitrile is mobile in soils, no data for the mixture itself.

12.5. Results of PBT and vPvB assessment

The mixture is not classified as PBT or vPvB and does not contain any components considered as PBT or vPvB.

12.6. Other adverse effects

No further information available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

The same safety measures in place for handling the product must be taken into consideration when handling waste. Waste should not be disposed of through the sewage system.

Spilled product should be handled as described in section 6.3. Reuse of packaging is not recommended. Recycling and disposal of packaging should be undertaken by an authorised waste management company.

European waste management legislation: Directive 2008/98/CE
Check your local regulations.

SECTION 14: TRANSPORT INFORMATION

14.1. UN number

UN1648

14.2. UN proper shipping name

ACETONITRILE SOLUTION

14.3. Transport hazard class(es)

Class: 3 (Flammable liquids)

Label:



14.4. Packing group

II

14.5. Environmental hazards

No marine pollutant

14.6. Special precautions for user

Hazard identification number (Kemler No.): 33
Classification code: F1

14.7. Transport in bulk according to annex II of Marpol and the IBC code

Not applicable

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

- REACH Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles: Not applicable.
- REACH Annex XIV - List of substances subject to authorization: None of the components listed.
- The product is not affected by the procedure laid down in Regulation (EU) No 649/2012 concerning the export and import of hazardous chemicals (PIC).
- Storage of flammable liquids: Seveso Directive (10/50 tn)

15.2. Chemical safety assessment

A Chemical Safety Assessment has been carried out for acetonitrile; Microcystin-LR is exempted from REACH registration.

SECTION 16: OTHER INFORMATION

Advice on any training appropriate for workers:

To ensure protection of human health and environment, workers must be provided with proper training about how to handle and store chemicals used at work.

Abbreviations and acronyms:

Please see European Chemicals Agency (ECHA) glossary at <https://echa-term.echa.europa.eu/>

Hazard statements in full (section 3):

H225	Highly flammable liquid and vapour.
H302 + H312 + H332	Harmful if swallowed, in contact with skin or if inhaled.
H319	Causes serious eye irritation.
H300	Fatal if swallowed.
H350	May cause cancer.



H411 Toxic to aquatic life with long lasting effects.

Classification codes:

Flam. Liq. 2 - Flammable liquids, category 2.
Acute Tox. 3 (Dermal) - Acute toxicity (dermal) category 3.
Acute Tox. 3 (Oral) - Acute toxicity (oral) category 3.
Acute Tox. 3 (Inhalation) - Acute toxicity (inhalation) category 3.
Eye Irrit. 2 - Eye irritant category 2.
Acute Tox. 1 (Oral) - Acute toxicity (oral) category 1.
Carc. 1B - Carcinogenicity, category 1B.
Aquatic Chronic 2 - Hazardous to the aquatic environment, chronic hazard, category 2.

Changes to the previous version:

- July, 12th 2019. Original issuing date, revision 1.
- September, 04th 2019. Harmonized UFI assignment. Sections 1.1, 1.4, 4, 12.2, 15.2 (revision 2).
- July, 8th 2020. Sections 1.3 and 1.4 (revision 3).

Key literature references:

- ECHA database on registered substances: <http://echa.europa.eu/web/guest/information-on-chemicals>.
- Guidance on compilation of Safety Data Sheet (ECHA v.3.1 Nov. 2015).
- Safety data sheets of the ingredients provided by our supplier and internally generated data.
- IFA - Databases on hazardous substance (GESTIS): <http://limitvalue.ifa.dguv.de/>
- ECHA III Lisa List (2018).

The information provided in this safety data sheet has been prepared in accordance with Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Please carefully study this product data sheet and if necessary consult a specialist in order to understand the information it contains. The information contained herein is true and accurate in terms of the aforementioned data, corresponding to the present state of our knowledge, and is provided in good faith. However, no explicit or implied warranty is given, as product quality may be altered by many factors.

THIS PRODUCT IS NOT INTENDED OR APPROVED FOR HUMAN, DIAGNOSTICS OR VETERINARY USE. USE OF THIS PRODUCT FOR HUMAN OR ANIMAL TESTING IS EXTREMELY HAZARDOUS AND MAY RESULT IN DISEASE, SEVERE INJURY, OR DEATH.

DO NOT HANDLE UNTIL ALL SAFETY PRECAUTIONS HAVE BEEN READ AND UNDERSTOOD.

