

SAFETY DATA SHEET

according to the Global Harmonized System

Cyclohexane-d12

1. Identification of the substance/preparation and of the company/undertaking

Use of the Substance/Preparation	Solvent for NMR spectroscopy
Company/Undertaking Identification	ARMAR AG Müligasse 7 CH-5312 Döttingen Schweiz Tel. +41 56 245 2600 admin@armar.ch
Emergency telephone number	Tox-Zentrum Zürich : 145 / +41 44 251 51 51 [24h/7d]
Revision Date	24.03.2010
Version	GHS 1

2. Hazards identification



DANGER!

Skin corrosion/irritation, Cat. 2
Aspiration hazard, Cat. 1
Specific target organ toxicity (single exposure, narcotic effects), Cat. 3
Flammable liquids, Cat. 2
Hazardous to the aquatic environment, chronic, Cat. 1

3. Composition/information on ingredients

Components	Health hazards	CAS	REACH No.
Cyclohexane-d12	CSk2 SAsp1 SSENarc3 NChr1 Fliq2	1735-17-7	

4. First aid measures

Inhalation	Move to fresh air. Consult a physician after significant exposure.
Skin contact	Wash with water and soap as a precaution.
Eye contact	Rinse thoroughly with plenty of water, also under the eyelids. If eye irritation persists, consult a specialist.
Ingestion	Rinse mouth. If conscious, drink plenty of water. Do not induce vomiting. Consult a physician if necessary.

5. Fire-fighting measures

Suitable extinguishing media	Use dry chemical, CO ₂ , water spray or alcohol foam.
Extinguishing media which must not be used for safety reasons	High volume water jet.
Specific hazards	Solvents may produce excessive pressure under fire-conditions. Sealed containers may rupture and ignite. Cool containers / tanks with water spray. Burning produces irritant fumes.
Special protective equipment for firefighters	Standard procedure for chemical fires.
Specific methods	Do not use a solid water stream as it may scatter and spread fire.

6. Accidental release measures

Personal precautions	Remove all sources of ignition. Pay attention to flashback.
Environmental precautions	Do not flush into surface water or sanitary sewer system.
Methods for cleaning up	Clean up promptly by sweeping or vacuum. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

7. Handling and storage

Handling	Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. The product should only be used in areas from which all naked lights and other sources of ignition have been excluded.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls / personal protection

Exposure limit(s)	MAK (Maximale Arbeitsplatzkonzentration): 200 ppm.
Occupational exposure controls	Avoid contact with skin, eyes and clothing.
Personal protection equipment	
Respiratory protection	In the case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.
Hand protection	Gloves made of Nitril.
Eye protection	Safety glasses.
Skin and body protection	Wear as appropriate: Solvent-resistant apron and boots.

9. Physical and chemical properties

Form	Liquid.
Colour	Colourless.
Odour	Sweet.
Physical and chemical properties	Flash point: -18 °C. Water solubility: insoluble Fat solubility: completely soluble Melting point/range: 7 °C. Boiling point/range: 78 °C. Density: 0.89 g/ml. Vapour pressure: 10400 Pa (20 °C). Explosion limits (lower): 1.2 %. Explosion limits (upper): 8.3 %.

10. Stability and reactivity

Stability	No decomposition if used as directed.
Conditions to avoid	Do not freeze. Heating in air.
Materials to avoid	Incompatible with oxidizing agents.
Hazardous decomposition products	None under normal use.

11. Toxicological information

Acute toxicity	Cyclohexane-D12 LD50/dermal/rabbit = > 2000 mg/kg. LD50/oral/rat = 12705 mg/kg.
Local effects	Irritating to skin. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Harmful if swallowed. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
Long term toxicity	Chronic exposure may cause permanent damage of health.
Sensitization	None.
Further information	Health injuries are not known or expected under normal use.

12. Ecological information

Ecotoxicity	EC50/48h/daphnia < 1000 mg/l . LC50/48h/golden orfe = 55 mg/l.
Persistence / degradability	Not readily biodegradable.
Bioaccumulative potential	Accumulation in aquatic organisms is unlikely.

13. Disposal considerations

Waste from residues / unused products	Dispose of as hazardous waste in compliance with local and national regulations. Do not contaminate ponds, waterways or ditches with chemical or used container.
Contaminated packaging	Empty containers can be landfilled, when in compliance with local regulations.

14. Transport information

ADR/RID	Proper shipping name CYCLOHEXANE UN No 1145. Class 3. Packing group II. ADR/RID-Labels 3+ENV. Classification code F1. Risk No. 33. Limited quantity LQ4. Tunnel code D/E
IMO	Proper shipping name Cyclohexane UN No 1145. Class 3. Packing group II. ADR/RID-Labels 3+ENV. Limited quantity 1 L. EmS F-E, S-D.
ICAO	Proper shipping name Cyclohexane UN No 1145. Class 3. Packing group II. Packing instruction (passenger aircraft): 305 (5 L). Packing instruction (LQ): Y305 (1 L). Packing instruction (cargo aircraft): 307 (60 L).

15. Regulatory information

GHS-Classification	
Signal Word	DANGER!
Hazard Statements	Highly flammable liquid and vapour. May be fatal if swallowed and enters airways. Causes skin irritation. May cause drowsiness and dizziness. Very toxic to aquatic life with long lasting effects.
Precautionary Statements	Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Take precautionary measures against static discharge. Avoid breathing dust/fume/gas/mist/vapours/spray. Wash skin thoroughly after handling. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Do NOT induce vomiting. If skin irritation occurs: Get medical advice/attention. Store in a well-ventilated place. Keep cool. Dispose of contents/container to an approved waste disposal plant.

GHS product identifier	Cyclohexane-d12, CAS-No. 1735-17-7, EC-No. 217-077-3
EC-Symbol(s)	F - Highly flammable. Xn - Harmful. N - Dangerous for the environment.
R-phrases(s)	R11: Highly flammable. R38: Irritating to skin. R65: Harmful: may cause lung damage if swallowed. R67: Vapours may cause drowsiness and dizziness. R50/53: Very toxic to aquatic organisms, may cause long-term effects in the aquatic environment.
S-phrase(s)	S9: Keep container in a well-ventilated place. S16: Keep away from sources of ignition - No smoking. S25: Avoid contact with eyes. S33: Take precautionary measures against static discharges. S51: Use only in well-ventilated areas. S60: This material and its container must be disposed of as hazardous waste. S61: Avoid release to the environment. Refer to special instructions / safety data sheets. S62: If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.
Regulatory Information	The product is classified and labelled according to Regulation (EC) No. 1272/2008 (GHS/CLP). The product is classified and labelled in accordance with Directive 1999/45/EC.

16. Other information

GHS-Classification	CSk2: Skin corrosion/irritation, Cat. 2 SAsp1: Aspiration hazard, Cat. 1 SSENarc3: Specific target organ toxicity (single exposure, narcotic effects), Cat. 3 NChr1: Hazardous to the aquatic environment, chronic, Cat. 1 Fliq2: Flammable liquids, Cat. 2
Further information	Take notice of the directions of use on the label.
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. It is not to be considered a warranty or quality specification.