



Material Safety Data Sheet

MDA (Malondialdehyde) HPLC

Catalog Number: 30-1900

ALPCO Diagnostics

26G Keewaydin Drive • Salem, NH 03079

Phone: (800) 592-5726 • Fax: (603) 898-6854

www.alpco.com • Email: web@alpco.com

Safety Data Sheet

MSDS ACCORDING TO REGULATION (EC) NO. 1907/2006

Version 1.2

Revision Date 2010-09-08

Print Date 2010-09-08

NO COUNTRY SPECIFIC DATA

1. Name of compound/preparation and manufacturer

- 1.1. Name of product:** MDA HPLC Kit
- 1.2. Number of product:** KC 1900
- 1.3. Manufacturer:** Immundiagnostik AG
Stubenwald-Allee 8a
64625 Bensheim
Germany
- 1.4. Manufacturer's contact phone:** +49-6251-701-900
- 1.5. Poison control center (US):** 1-800-222-1222 (toll free)

2. Composition / Declaration of components

2.1. Chemical characterization of the preparation:

Liquids

2.2. Dangerous ingredients:

Reagent	CAS No	EC No	EC-Index No	Classification	Content [%]	Special instruction see on
Mobile Phase - Acetonitrile	75-05-8	200-835-28	608-001-00-3	F, Xn, R11-20/21/22 - R36	> 90	SHEET 2
Reaction buffer - 1-Butanol	200-751-6	603-004-00-6	200-751-6	Xn, R10 - R22 - R37/38 - R41 - R67	> 90	SHEET 3

1 IDENTIFICATION OF THE SUBSTANCE

Name Acetonitrile

2 - Hazards Identification

Risk advice to man and the environment

- Highly flammable. Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes.

3 - Composition/Information on Ingredients

Formula : C₂H₃N
Molecular Weight : 41,05 g/mol

Reagent	CAS No	EC No	EC-Index No	Classification
Acetonitrile	75-05-8	200-835-2	608-001-00-3	F, Xn, R11-20/21/22 - R36

4 - First Aid Measures

General advice

- Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

- If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact

- Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

- Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

- Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5 - Fire Fighting Measures

Suitable extinguishing media

- For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of

water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire-fighters

- Wear self contained breathing apparatus for fire fighting if necessary.

Further information

- Use water spray to cool unopened containers.

6 - Accidental Release Measures

Personal precautions

- Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions

- Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods for cleaning up

- Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7 - Handling and Storage

Handling

- Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Storage

- Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Handle and store under inert gas.

8 - Exposure Controls / Personal Protection

Personal protective equipment

- Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US)

or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

- Hand protection: The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.
- Eye protection: Safety glasses
- Skin and body protection: Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9 Physical and Chemical Properties

Appearance :	Form	liquid, clear
	Colour	colourless
	Odour	pungent

Safety data

pH	no data available
Melting point	-48,0 °C
Boiling point	81,0 - 82,0 °C
Flash point	2,0 °C - closed cup
Ignition temperature	523 °C
Lower explosion limit	4,4 %(V)
Upper explosion limit	16 %(V)
Vapour pressure	97,1 hPa at 20,0 °C
Density	0,78 g/cm ³
Water solubility	soluble
Partition coefficient: n-octanol/water	log Pow: -0,34

10 - Stability and Reactivity

Storage stability

- Stable under recommended storage conditions.

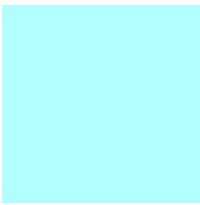
Conditions to avoid

- Heat, flames and sparks.

Materials to avoid

- acids, Bases, Oxidizing agents, Reducing agents, Alkali metals

Hazardous decomposition products



- Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx), Hydrogen cyanide (hydrocyanic acid)

11 - Toxicological Information

ACUTE TOXICITY

LD50 Oral - rat - 2.460 mg/kg

LC50 Inhalation - rat - 8 h - 7551 ppm

Remarks: Behavioral:Altered sleep time (including change in righting reflex).

Behavioral:Convulsions or effect on seizure threshold. Blood: Hemorrhage.

LD50 Dermal - rabbit - 2.000 mg/kg

Irritation and corrosion

Skin - rabbit - Mild skin irritation

Eyes - rabbit - Severe eye irritation

Sensitisation

no data available

Chronic exposure

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

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

Signs and Symptoms of Exposure

Treat as cyanide poisoning., Always have on hand a cyanide first-aid kit, together with proper instructions., The onset of symptoms is generally delayed pending conversion to cyanide., Nausea, Vomiting, Diarrhoea, Headache, Dizziness, Rash, Cyanosis, excitement, depression, Drowsiness, impaired judgment, Lack of coordination, stupor, death

Potential Health Effects

Inhalation	Harmful if inhaled. May cause respiratory tract irritation.
Skin	Harmful if absorbed through skin. May cause skin irritation.
Eyes	Causes eye irritation.
Ingestion	Harmful if swallowed
Target Organs	Lungs, Blood, Kidney, Liver, Central nervous system,

Additional Information

RTECS: AL7700000

12 - Ecological Information

Elimination information (persistence and degradability)
no data available

Ecotoxicity effects

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 1.640,00 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates.	EC50 - Daphnia magna (Water flea) - 3.600,00 mg/l - 48 h
	NOEC - Daphnia magna (Water flea) - 640 mg/l - 14 d

Further information on ecology
No data available.

13 - Disposal Considerations

Product

- Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

- Dispose of as unused product.

14 - Transport Information

RID/ADR

UN-Number: 1648
Class: 3
Packing group: II
Proper shipping name: ACETONITRILE

IMDG

UN-Number: 1648
Class: 3
Packing group: II EMS-No: F-E, S-D
Proper shipping name: ACETONITRILE
Marine pollutant: No

IATA

UN-Number: 1648
Class: 3

Packing group: II
Proper shipping name: Acetonitrile

15 - Regulatory Information

Labelling according to EC Directives
EC Label

Hazard symbols

F	Highly flammable
Xn	Harmful

R-phrases(s)

R11	Highly flammable
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed
R36	Irritating to eyes

S-phrases(s)

S16	Keep away from sources of ignition - No smoking
S36/37	Wear suitable protective clothing and gloves

1 - IDENTIFICATION OF THE SUBSTANCE

Name 1-Butanol

2 - Hazards Identification

Risk advice to man and the environment

- Flammable. Harmful if swallowed. Irritating to respiratory system and skin. Risk of serious damage to eyes. Vapours may cause drowsiness and dizziness.

3 - Composition/Information on Ingredients

Synonyms : Butyl alcohol
 n-Butanol

Formula : C₄H₁₀O

Molecular Weight : 74,12 g/mol

Reagent	CAS No	EC No	EC-Index No	Classification
n- Butanol	200-751-6	603-004-00-6	200-751-6	Xn, R10 - R22 - R37/38 - R41 - R67

4 - First Aid Measures

General advice

- Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

- If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact

- Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

- Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

- Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5 - Fire Fighting Measures

Suitable extinguishing media

- For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very

large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Specific hazards

- Flash back possible over considerable distance.

Special protective equipment for fire-fighters

- Wear self contained breathing apparatus for fire fighting if necessary.

Further information

- In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray to cool unopened containers.

6 - Accidental Release Measures

Personal precautions

- Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions

- Do not let product enter drains.

Methods for cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

7 - Handling and Storage

Handling

- Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
- Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Storage

- Store in cool place. Keep container tightly closed in a dry and well-ventilated place.
- Handle and store under inert gas. hygroscopic

8 - Exposure Controls / Personal Protection

Personal protective equipment

- Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
- Hand protection The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.
- Eye protection : Safety glasses Skin and body protection: Choose body protection according to the amount and concentration of the dangerous substance at the workplace.
- Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9 Physical and Chemical Properties

Appearance : Form liquid, clear
Colour colourless

Safety data

pH	no data available
Melting point	-90 °C
Boiling point	116 - 118 °C
Flash point	35 °C - closed cup
Ignition temperature	343 °C
Lower explosion limit	1,4 %(V)
Upper explosion limit	11,2 %(V)
Vapour pressure	5 hPa at 20 °C
Density	0,81 g/mL at 25 °C
Water solubility	soluble
Relative vapour density	2,56
density	- (Air = 1.0)

10 - Stability and Reactivity

Storage stability

- Stable under recommended storage conditions.

Conditions to avoid

- Exposure to moisture.
Heat, flames and sparks.

Materials to avoid

- Oxidizing agents, Alkali metals, Bases, Strong acids, Halogens´

Hazardous decomposition products

- Hazardous decomposition products formed under fire conditions. - Carbon oxides

11 - Toxicological Information

ACUTE TOXICITY

LD50 Oral - rat - 790 mg/kg

Remarks: Liver:Fatty liver degeneration. Kidney, Ureter, Bladder:Other changes. Blood:Other changes.

LC50 Inhalation - rat - 4 h - 8000 ppm

LD50 Dermal - rabbit - 3400 mg/kg

Irritation and corrosion

Skin - rabbit - Skin irritation - 24 h

Eyes - rabbit - Eye irritation

Sensitisation

no data available

Chronic exposure

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

Signs and Symptoms of Exposure

drying, cracking of the skin, Skin irritation

Potential Health Effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes serious eye irritation.
Ingestion	Harmful if swallowed
Target Organs	Central nervous system, ears, Liver, Kidney, Blood

Additional Information

- RTECS: EO1400000

12 - Ecological Information

Elimination information (persistence and degradability)

Bioaccumulation	Oncorhynchus mykiss (rainbow trout) - 24 h Bioconcentration factor (BCF): 0,38
-----------------	---

Ecotoxicity effects

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 1.840 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates.	EC50 - Daphnia magna (Water flea) - 1.983 mg/l - 48 h

Further information on ecology

No data available.

13 - Disposal Considerations

Product

- Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

- Dispose of as unused product.

14 - Transport Information

ADR/RID

UN-Number: 1120
Class: 3
Packing group: III
Proper shipping name: BUTANOLS

IMDG

UN-Number: 1120
Class: 3
Packing group: III EMS-No: F-E, S-D
Proper shipping name: BUTANOLS
Marine pollutant: No

IATA

UN-Number: 1120
Class: 3
Packing group: III
Proper shipping name: BUTANOLS

15 - Regulatory Information

Labelling according to EC Directives

Hazard symbols

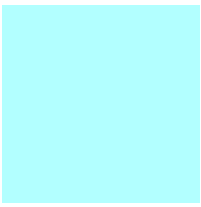
Xn	Harmful
----	---------

R-phrases(s)

R10	Flammable.
R22	Harmful if swallowed.
R37/38	Irritating to respiratory system and skin.
R41	Risk of serious damage to eyes.
R67	Vapours may cause drowsiness and dizziness.

S-phrases(s)

S 7/9	Keep container tightly closed and in a well-ventilated place.
S13	Keep away from food, drink and animal feedingstuffs.
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S37/39	Wear suitable gloves and eye/face protection.
S46	If swallowed, seek medical advice immediately and show this container or label.



Disclaimer:

Immundiagnostik AG provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. Immundiagnostik AG makes no representations or warranties. Either express or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers. Accordingly, Immundiagnostik AG will not be responsible for damages resulting from use of or reliance upon this information.