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1 Identification of the substance/mixture and of the company/undertaking

- · Product identifier
- · Trade name: Acetonitrile DNA Grade 99.8%
- · **Article number:** 50-1408-10
- · CAS Number:

75-05-8

· EC number:

200-835-2

· Index number:

608-001-00-3

- **Registration number** 01-2119471307-38
- · Relevant identified uses of the substance or mixture and uses advised against

Pharmaceutical, fine chemical and active substance manufacture uses; Professional use of acetonitrile as a laboratory reagent; Photographic/printing uses.

Uses advised against:

- Uses by consumers
- Use of acetonitrile in consumer products
- · Sector of Use
- SU0 Other
- SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
- SU8 Manufacture of bulk, large scale chemicals (including petroleum products)
- SU9 Manufacture of fine chemicals
- SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
- SU16 Manufacture of computer, electronic and optical products, electrical equipment
- SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
- SU24 Scientific research and development

Product category

- PC19 Intermediate
- PC20 Products such as ph-regulators, flocculants, precipitants, neutralization agents
- PC21 Laboratory chemicals
- PC29 Pharmaceuticals
- PC30 Photo-chemicals
- PC35 Washing and cleaning products (including solvent based products)
- PC40 Extraction agents
- · Process category
- PROC1 Use in closed process, no likelihood of exposure
- PROC2 Use in closed, continuous process with occasional controlled exposure
- PROC3 Use in closed batch process (synthesis or formulation)
- PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises
- PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
- PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
- PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
- PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
- PROC10 Roller application or brushing
- PROC14 Production of preparations or articles by tabletting, compression, extrusion, pelletisation
- PROC15 Use as laboratory reagent
- Environmental release category
- ERC1 Manufacture of substances
- ERC2 Formulation of preparations
- ERC4 Industrial use of processing aids in processes and products, not becoming part of articles
- ERC5 Industrial use resulting in inclusion into or onto a matrix
- ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)
- ERC6b Industrial use of reactive processing aids

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ERC7 Industrial use of substances in closed systems

- · Article category AC1 Vehicles
- · Application of the substance / the preparation

The substance has many industrial and professional applications.

- · Details of the supplier of the safety data sheet
- · Manufacturer/Supplier:

Severn Biotech Ltd.

Unit 2,

Park Lane.

Kidderminster,

Worcestershire.

DY11 6TJ

UK

Tel: 0044 1562 825286 Fax: 0044 1562 825284 email: info@severnbiotech.com

- · Further information obtainable from: Product safety department.
- · Emergency telephone number: Tel: 0044 1562 825286 (not 24 hours)

2 Hazards identification

- · Classification of the substance or mixture
- · Classification according to Regulation (EC) No 1272/2008



GHS02 flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

Eye Irrit. 2 H319 Causes serious eye irritation.

· Classification according to Directive 67/548/EEC or Directive 1999/45/EC



Xn; Harmful

R20/21/22: Harmful by inhalation, in contact with skin and if swallowed.



Xi; Irritant

R36: Irritating to eyes.



F; Highly flammable

R11: Highly flammable.

- · Information concerning particular hazards for human and environment: Not applicable.
- · Label elements
- · Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labelled according to the CLP regulation.

- · Hazard pictograms GHS02, GHS07
- · Signal word Danger

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· 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/sparks/open flames/hot surfaces. - No smoking.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

P270 Do no eat, drink or smoke when using this product.

P260 Do not breathe mist/vapours/spray.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing.

Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses,

if present and easy to do. Continue rinsing.

- · Other hazards
- · Results of PBT and vPvB assessment
- PBT: Not applicable.vPvB: Not applicable.

3 Composition/information on ingredients

· Chemical characterization: Substances

 \cdot CAS No. Description

75-05-8 acetonitrile

· Identification number(s) · EC number: 200-835-2

· Index number: 608-001-00-3

4 First aid measures

· Description of first aid measures

· General information:

Do not leave affected persons unattended.

Seek immediate medical advice.

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· After inhalation:

DO NOT DELAY!

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

Resuscitate using a mouth-to-mask with one-way valve or with Ambu Bag.

· After skin contact:

DO NOT DELAY!

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

Remove contaminated clothing and shoes. Wash clothing before reuse. Contaminated leather, particularly footwear, must be discarded. Note that contaminated clothing may be a fire hazard.

· After eye contact:

DO NOT DELAY!

Rinse opened eye for several minutes under running water. Then consult a doctor.

Check for and remove any contact lenses.

· After swallowing:

DO NOT DELAY!

Wash mouth out with water

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Do not induce vomiting; call for medical help immediately.

Do not wait for symptoms to develop.

Never give anything by mouth to an unconscious person.

If symptomatic, treat as described under Inhalation.

If not breathing, ensure clear airway and institute cardiopulmonary resuscitation (CPR). Avoid mouth to mouth resuscitation. Use mouth to mask ventilation with one way valve to exhaust victim's exhaled air away from rescuer. If breathing is difficult, ensure clear airway and give oxygen.

Information for doctor:

If the patient is conscious and breathing normally, administration of oxygen is the only treatment necessary.

If symptoms of cyanide poisoning are evident, administer amyl nitrate by inhalation for 15-30 seconds every minute. Immediately inject 10 ml of a 3% solution of sodium nitrate intravenously over a period of 1 to 4 minutes.

Upon absorption and metabolism acetonitrile immediately begins a slow release of cyanide, which can continue for several hours. The toxic effects and associated clinical signs of cyanide poisoning may therefore be delayed. Take a blood sample in all cases for blood cyanide using fluoride/oxalate tube and chill immediately and arrange urgent analysis. Blood cyanide levels will take some time to become available, and are generally only useful as a retrospective indicator of exposure. Treatment decisions must therefore be based on the clinical features of each individual case, without waiting for blood cyanide results.

In a deteriorating clinical situation, with a patient's conscious level decreasing, in addition to the need for cardio-pulmonary resuscitation, consideration should be given to the use of a specific cyanide antidote [dicobalt edetate (kelocyanor)]. THIS SPECIFIC ANTIDOTE IS DANGEROUS WHEN ADMINISTERED IN THE ABSENCE OF SERIOUS CYANIDE POISONING.

One ampoule of dicobalt edetate (300mg) diluted in 20ml glucose solution is given by slow intravenous injection, being careful to avoid extravasation. Constant pulse and blood pressure monitoring is required, along with facilities for resuscitation, as sudden severe fall in blood pressure can occur during injection.

Treatment may be repeated if there is an inadequate response to the initial injection.

- Most important symptoms and effects, both acute and delayed
- No further relevant information available.
- · Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Firefighting measures

- · Extinguishing media
- · Suitable extinguishing agents:

CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· Special hazards arising from the substance or mixture

During heating or in case of fire poisonous gases are produced.

Decomposition products may include the following materials: carbon oxides (CO, CO2), nitrogen oxides (NO, NO2 etc.), Hydrogen cyanide (HCN).

Highly flammable liquid and vapour. Vapour may cause flash fire. Vapours 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.

- · Advice for firefighters
- · Protective equipment:

Wear fully protective suit.

Wear self-contained respiratory protective device.

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Do not inhale explosion gases or combustion gases.

· Additional information

Cool endangered receptacles with water spray.

Eliminate all ignition sources. Do not touch or walk through spilt material. Keep unnecessary personnel away.

DO NOT FIGHT FIRE WHEN IT REACHES MATERIAL. Withdraw from fire and let it burn. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. First move people out of line-of-sight of the scene and away from windows.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures

Keep ignition sources away - no smoking.

Wear protective equipment. Keep unprotected persons away.

Personal protection in case of a large spill: Splash goggles. Full suit. Vapour respirator or self-contained breathing apparatus (SCBA). Boots. Gloves. Suggested protective clothing might not be adequate. Consult a specialist before handling this product.

· Environmental precautions:

Do not allow to enter sewers/ surface or ground water.

Do not allow to penetrate the ground/soil.

· Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Send for recovery or disposal in suitable receptacles.

Ensure adequate ventilation.

Do NOT wash away into sewer.

· Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

· Handling:

· Precautions for safe handling

Restrict the quantity stored at the work place.

Prevent formation of aerosols.

Avoid direct contact (skin contact, ingestion and/or inhalation of fume/mist/dust) with the product.

Ensure good ventilation/exhaustion at the workplace.

Cyanide poisoning first-aid (antidote) kits containing amyl nitrite ampules (or equivalent) must be available at the work site.

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits.

Workplaces must be equiped with emergency showers and eye wash facilities.

Do NOT use compressed air for filling, discharging, or handling.

Do not mix with acids.

Take note of assigned workplace exposure levels.

· Information about fire - and explosion protection:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

- · Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles:

Store in a cool location.

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Prevent any seepage into the ground.

· Information about storage in one common storage facility:

Store away from oxidizing agents.

Store away from foodstuffs.

· Further information about storage conditions:

Store in a bunded area.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

Store in a segregated and approved area.

Keep container tightly closed and sealed until ready for use.

Avoid all possible sources of ignition (spark or flame).

· Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- · Additional information about design of technical facilities: No further data; see item 7.
- · Control parameters
- · Ingredients with limit values that require monitoring at the workplace:

75-05-8 acetonitrile

WEL Short-term value: 102 mg/m³, 60 ppm Long-term value: 68 mg/m³, 40 ppm

· DNELs

WORKERS

Acute / short-term exposure - systemic effects

Inhalation DN(M)EL

- DNEL (Derived No Effect Level): 68 mg/m³

Acute / short-term exposure - local effects

Inhalation DN(M)EL

- DNEL (Derived No Effect Level): 68 mg/m³

Long-term exposure - systemic effects

Dermal DN(M)EL

- DNEL (Derived No Effect Level): 32.2 mg/kg bw/day

Inhalation DN(M)EL

- DNEL (Derived No Effect Level): 68 mg/m³

Long-term exposure - local effects

Inhalation DN(M)EL

- DNEL (Derived No Effect Level): 68 mg/m³

GENERAL POPULATION

Acute / short-term exposure - systemic effects

Inhalation DN(M)EL

- DNEL (Derived No Effect Level): 220 mg/m³

Oral DN(M)EL

- DNEL (Derived No Effect Level): 0.6 mg/kg bw/day

Acute / short-term exposure - local effects

Inhalation DN(M)EL

- DNEL (Derived No Effect Level): 22 mg/m³

Long-term exposure - systemic effects

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Inhalation DN(M)EL

- DNEL (Derived No Effect Level): 4.8 mg/m³

Long-term exposure - local effects

Inhalation DN(M)EL

- DNEL (Derived No Effect Level): 4.8 mg/m³

· PNECs

PNEC aqua (freshwater): 10 mg/L PNEC aqua (marine water): 1 mg/L

PNEC aqua (intermittent releases): 10 mg/L

PNEC STP: 32 mg/L

PNEC sediment (freshwater): 7.53 mg/kg sediment dw

PNEC sediment (marine water): No exposure of sediment expected

PNEC soil: 2.41 mg/kg soil dw

PNEC oral: No potential for bioaccumulation

· Additional information: The lists valid during the making were used as basis.

· Exposure controls

· Personal protective equipment:

Select PPE appropriate for the operations taking place taking into account the product properties.

· General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Do not inhale gases / fumes / aerosols.

Do not eat, drink, smoke or sniff while working.

Storing food in the working area is prohibited.

A safe system of work must be formulated and followed to ensure that workers who may be pregnant or breastfeeding do not come into direct contact with the product.

A safe system of work must be formulated and followed to ensure safe working with this product. Relevant workers must receive suitable and sufficient training and supervision.

· Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Butyl rubber.

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:



Tightly sealed goggles

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· Body protection: Solvent resistant protective clothing

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9 Physical and chemical proper	ties
· Information on basic physical and o · General Information	
· Appearance:	
Form:	Fluid
Colour:	Colourless
· Odour:	Aromatic
· Odour threshold:	Not determined.
· pH-value:	Not determined.
Change in condition	
Melting point/Melting range:	-46 °C
Boiling point/Boiling range:	81 °C
· Flash point:	5 °C
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	524 °C
· Decomposition temperature:	Not determined.
· Self-igniting:	Not determined.
· Danger of explosion:	Product is not explosive. However, formation of explosi- air/vapour mixtures are possible.
· Explosion limits:	
Lower:	3 Vol %
Upper:	16 Vol %
· Vapour pressure at 20 °C:	95 hPa
· Density at 20 °C:	0.79 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water at 20 °C:	1000 g/l
· Partition coefficient (n-octanol/wat	
•	
· Viscosity: Dynamic at 20 °C:	0.39 mPas
Kinematic:	Not determined.
· Other information	No further relevant information available.

10 Stability and reactivity

- · Reactivity
- · Chemical stability
- · Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.

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· Possibility of hazardous reactions

Flammable vapour-air mixtures may develop if stored in large receptacles and above room temperature. Reacts with aqueous acids and bases producing toxic fumes.

Reacts with strong oxidants causing fire and explosion hazard.

Attacks some forms of plastic, rubber and coatings.

- · Conditions to avoid No further relevant information available.
- · Incompatible materials:

Strong acids and oxidising agents

Strong bases.

Incompatible with acids, bases, nitrating agents, nitrogen-fluorine compounds, oxidizers, perchlorates, sulphites.

· Hazardous decomposition products:

Carbon monoxide and carbon dioxide

Nitrogen oxides (NOx)

Hydrogen cyanide (prussic acid)

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:

- LD/LC50 x	values	relevant for	classification:
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Oral	LD50	617 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rabbit

- · Primary irritant effect:
- · on the skin: No irritant effect.
- · on the eye: Irritating effect.
- · Sensitization: No sensitizing effects known.
- \cdot Additional toxicological information:

ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion.

INHALATION RISK: A harmful contamination of the air can be reached rather quickly on evaporation of this substance at $20 \, ^{\circ}$ C.

EFFECTS OF SHORT-TERM EXPOSURE: The substance is irritating to the eyes, the skin and the respiratory tract. The substance may cause effects on the cellular respiration (inhibition), resulting in convulsions and respiratory failure. Exposure far above the workplace exposure level may result in death. The effects may be delayed. Medical observation is indicated.

12 Ecological information

- · Toxicity
- · Aquatic toxicity:

EC50 >1000 mg/kg (daphnia)

- · Persistence and degradability biodegradable
- · Behaviour in environmental systems:
- · Bioaccumulative potential Product is not expected to bioaccumulate.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:

Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

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- · Results of PBT and vPvB assessment
- · **PBT:** Not applicable.
- · **vPvB:** Not applicable.
- · Other adverse effects No further relevant information available.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system. Contact waste processors for recycling information.

Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

· European waste catalogue

Waste key numbers in accordance with the European Waste catalogue (EWC) are origin-referred defined. Since this product is used in several industries, no waste key can be provided by the supplier. The waste key number should be determined in arrangement with your waste disposal partner or the responsible authority.

- · Uncleaned packaging:
- · Recommendation:

Disposal must be made according to official regulations.

Container remains hazardous when empty. Continue to observe all precuations.

• Recommended cleansing agents: Water, if necessary together with cleansing agents.

TIM Marakan		
UN-Number ADR, IMDG, IATA	UN1648	
	0111040	
UN proper shipping name		
ADR	1648 ACETONITRILE	
IMDG, IATA	ACETONITRILE	
Transport hazard class(es)		
ADR, IMDG, IATA		
Class	3 Flammable liquids.	
Label	3	
Packing group		
ADR, IMDG, IATA	II	
Environmental hazards:		
Marine pollutant:	No	
Special precautions for user	Warning: Flammable liquids.	
Danger code (Kemler):	33	
EMS Number:	F-E,S-D	

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	(Contd. of page
· Transport in bulk according to Annex	II of
MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	1L
· Transport category	2
· Tunnel restriction code	D/E
· UN "Model Regulation":	UN1648, ACETONITRILE, 3, II

15 Regulatory information

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

GB