

Safety data sheet
COMMISSION REGULATION (EU) No 2015/830 of 1
June 2015 amending Annex II of Regulation (EU) No
453/2010

Printing date 20.03.2021

Revision: 20.03.2021

**SECTION 1: Identification of the substance/mixture and of the company/
undertaking**

- **Trade name:** acetonitrile
- **CAS Number:**
75-05-8
- **EC number:**
200-835-2
- **Index number:**
608-001-00-3
- **Registration number** 01-2119471307-38-0046
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Sector of Use**
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)
SU11 Manufacture of rubber products
SU16 Manufacture of computer, electronic and optical products, electrical equipment
SU19 Building and construction work
SU20 Health services
SU24 Scientific research and development
SU 0: Other: 3: Industrial
SU2b Offshore industries
- **Product category**
PC19 Intermediate
PC20 Products such as ph-regulators, flocculants, precipitants, neutralisation 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)
PROC6 Calendering operations
PROC7 Industrial spraying
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)
PROC15 Use as laboratory reagent

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- **Environmental release category**

- ERC1 Manufacture of substances

- ERC2 Formulation of preparations

- ERC3 Formulation in materials

- ERC4 Industrial use of processing aids in processes and products, not becoming part of articles

- ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)

- ERC6b Industrial use of reactive processing aids

- ERC7 Industrial use of substances in closed systems

- ERC8a Wide dispersive indoor use of processing aids in open systems

- ERC8c Wide dispersive indoor use resulting in inclusion into or onto a matrix

- ERC10a Wide dispersive outdoor use of long-life articles and materials with low release

- **Article category AC1 Vehicles**

- **Application of the substance / the mixture**

- API & intermediate synthesis

- Purification of Butadiene in refineries

- In organic Synthesis & Mfg. of photographic film

- Used in Mfg. of DNA oligonucleotides

- Substitute for chlorinated solvent

- Solvent for Agrochemical synthesis

- **1.3 Details of the supplier of the safety data sheet**

- **Manufacturer/Supplier:**

- KAIRAV CHEMOFARBE INDUSTRIES LTD,

- 502 Filix, LBS Marg,

- Opposite Asian Paints, Bhandup (West), Mumbai-400078

- **Further information obtainable from:**

- Tel; +91 22 25968361 / 62

- Fax:- +91 22 25958586 www.chemofarbe.com

- **OR Details**

- Sustainability Support Services (Europe) AB

- Ideon Science Park, Scheelevägen 17, Beta 5, 22370 Lund, Sweden

- **1.4 Emergency telephone number:**

- Contact details of European importer

- Emergency telephone number: 9820353425

- Telephone number of EU importer:

- Opening hours:

- Other Comments (e.g. language(s) of the phone service): English

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SECTION 2: Hazards identification

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



flame

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



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.

- **2.2 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
- **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.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P303+P361+P353 IF ON SKIN (or hair): 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.

P321 Specific treatment (see on this label).

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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

SECTION 3: Composition/information on ingredients

- **3.1 Chemical characterisation: Substances**
- **CAS No. Description**
75-05-8 acetonitrile
- **Identification number(s)**
- **EC number:** 200-835-2
- **Index number:** 608-001-00-3
- **Additional information:**
Molecular Formula : C₂H₃N
Molecular Weight : 41.05 g/mol
Composition : 99 % min.
- **SVHC** The substance is not in the list of SVHC substances

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may occur even after several hours; therefore medical observation is suggested for at least 48 hours after the accident.
- **After inhalation:**
If inhaled, remove to fresh air. Keep person warm and at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Resuscitate using a mouth-to-mask with one-way valve or with Ambu Bag. Get medical attention immediately. 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.
- **After skin contact:**
Immediately wash exposed skin with soap and water. 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. Get medical attention immediately.
- **After eye contact:**
Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Get medical attention immediately.
- **After swallowing:**
Get immediate medical attention. Do not wait for symptoms to develop. Do not induce vomiting. If not breathing, ensure clear airway and institute cardiopulmonary resuscitation

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(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. If symptomatic, treat as described under Inhalation. If swallowed, rinse mouth with water (only if the person is conscious). Never give anything by mouth to an unconscious person.

· **4.2 Most important symptoms and effects, both acute and delayed**

· Most important symptoms and effects, both acute and delayed

Extreme irritation of mucous membranes

After swallowing: Nausea, Vomiting, Dizziness, Headache, Spasms, Unconsciousness, Apnoea

· **Information for doctor:**

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

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.

· **4.3 Indication of any immediate medical attention and special treatment needed**

1. Always have a cyanide antidote kit on hand when working with cyanide compounds. Get medical advice to use. The combination of sodium thiosulfate and hydroxycobalamin has been used as an effective antidote.

2. Symptomatic treatment

(decontamination, vital functions)

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**

· **Suitable extinguishing agents:**

In case of fire, use water fog, foam, dry chemical or carbon dioxide extinguisher or spray.

· **For safety reasons unsuitable extinguishing agents:** Direct jet water

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- **5.2 Special hazards arising from the substance or mixture**

Can form explosive gas-air mixtures.

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

- **5.3 Advice for firefighters**

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.

- **Protective equipment:**

Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

- **Additional information**

Heating leads to pressure increase entailing danger of bursting and explosion. Immediately cool neighbouring packages and

containers with sprayed water and, if possible, remove them out of the danger zone

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Collect contaminated fire fighting water separately. It must not enter the sewage system.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**

Immediately contact emergency personnel. Eliminate all ignition sources. Do not touch or walk through spilt material. Keep unnecessary personnel away. Follow all fire-fighting procedures. Use suitable protective equipment.

- **6.2 Environmental precautions:**

If emergency personnel are unavailable, contain spilt material. For small spills, add absorbent (soil may be used in the absence of other suitable materials) and use a non-sparking or explosion-proof means to transfer material to a sealable, appropriate container for disposal. For large spills, dyke spilt material or otherwise contain it to ensure runoff does not reach a waterway.

- **6.3 Methods and material for containment and cleaning up:**

Ensure adequate ventilation.

Place spilt material in an appropriate container for disposal. Avoid contact of spilt material with soil and prevent runoff entering surface waterways.

- **6.4 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.

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SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

Do not get in eyes, on skin or on clothing. Keep container closed. Use only with adequate ventilation. Keep away from heat, sparks and flame.

· Information about fire - and explosion protection:

To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Wash thoroughly after handling. Cyanide poisoning first-aid (antidote) kits containing amyl nitrite ampules (or equivalent) must be available at the work site.

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

No welding.

Work on containers and pipelines is permitted only after thorough purging and inerting.

· 7.2 Conditions for safe storage, including any incompatibilities

Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

· Storage:

· Requirements to be met by storerooms and receptacles:

Store container tightly sealed at a cool and dry place with sufficient ventilation.

Pay attention to special rules for the storage of flammable liquids.

Provide solvent resistant, sealed floor.

· Information about storage in one common storage facility:

Store away from foodstuffs.

Store away from feed.

· Further information about storage conditions:

Store in cool, dry conditions in well sealed receptacles.

Protect from humidity and water.

Protect from heat and direct sunlight.

· Storage class: 3 Flammable Liquids

· 7.3 Specific end use(s)

API & intermediate synthesis

Purification of Butadiene in refineries

In organic Synthesis & Mfg. of photographic film

Used in Mfg. of DNA oligonucleotides

Substitute for chlorinated solvent

Solvent for Agrochemical synthesis

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SECTION 8: Exposure controls/personal protection

· **Additional information about design of technical facilities:**

Use adequate ventilation to keep airborne concentrations low. Use explosion-proof ventilation equipment. An eyewash facility and a safety shower shall be provided at suitable places.

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

75-05-8 acetonitrile

EH40-OES (United Kingdom (UK), 2001).

STEL 102 mg/m³ 15 minute(s).

STEL 60 ppm 15 minute(s).

TWA 68 mg/m³ 8 hour(s).

TWA 40 ppm 8 hour(s).

EH40-WEL (United Kingdom (UK), 1/2005).

STEL 102 mg/m³ 15 minute(s).

STEL 60 ppm 15 minute(s).

TWA 68 mg/m³ 8 hour(s).

TWA 40 ppm 8 hour(s).

· **DNELs**

DN(M)ELs for worker:

Acute - systemic effects-Inhalation:

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

Acute - local effects-Inhalation:

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

Long-term - systemic effects-Dermal:

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

Long-term - systemic effects-Inhalation:

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

DN(M)ELs for the general population:

Acute - systemic effects-Inhalation:

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

Acute - systemic effects-Oral

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

Acute - local effects-Inhalation:

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

Long-term - systemic effects-Inhalation:

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

Long-term - local effects-Inhalation:

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

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- **PNECs**

PNEC water

PNEC aqua (freshwater): 10 mg/L

PNEC aqua (marine water): 1 mg/L

PNEC aqua (intermittent releases): 10 mg/L

PNEC sediment

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

PNEC soil

PNEC soil: 2.41 mg/kg soil dw

PNEC sewage treatment plant

PNEC STP: 32 mg/L

PNEC oral(secondary poisoning)-No potential for bioaccumulation

- **8.2 Exposure controls**

- **Personal protective equipment:**

- **Respiratory protection:**

In case of unintentional release of substance, exceeding the occupational exposure limit value:

In case of brief exposure or low pollution use a respiratory filter device. In case of intensive or longer exposure use a respiratory protective device that is independent of circulating air.

- **Protection of hands:**



Protective gloves

Chemical resistant gloves

Check the permeability before using the gloves again.

Preventive skin protection by use of skin-protecting agents is recommended.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves** *Use gloves of neoprene, butyl rubber or polyethylene.*

- **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

If vapours or aerosols arise which may injure the eyes, wearing of a full mask is recommended.

- **Body protection:**

Boots

Protective work clothing

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Impervious protective clothing

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SECTION 9: Physical and chemical properties**· 9.1 Information on basic physical and chemical properties****· General Information****· Appearance:**

Form:	Liquid
Colour:	Colourless
Odour:	Faint

· Change in condition

Melting point/Melting range:	-45.7 °C(1013 hPa)
Boiling point/Boiling range:	81.3 °C(1013hPa)

· Flash point:

closed cup: 12.8 deg C
open cup: 5 to 6 deg C

· Flammability (solid, gaseous):

3.0 % (lower limit) and 16.0 % (upper limit) at room temperature-Highly Flammable Liquid

· Ignition temperature:

524 °C
Product is not explosive. However, formation of explosive air/vapour mixtures is possible

· Explosion limits:

Lower:	3.00 Vol %
Upper:	16 Vol %

· Oxidising properties

No

· Vapour pressure at 20 °C:

98.64 hPa

· Density:

Relative density at 20 °C 0.79 g/cm³

· Solubility in / Miscibility with water at 25 °C:

1,000,000 mg/L

· Partition coefficient (n-octanol/water) at 25 °C:

0.34 log POW

· Viscosity:

Dynamic at 20 °C: 0.35 mPas

· 9.2 Other information

Surface tension-29.04 dynes/cm at 20 deg C
Dissociation constant-pKa estimated to be -4.30

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SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability** Highly reactive substance.
- **10.3 Possibility of hazardous reactions**
Exothermic reaction with sulfuric acid at 53 °C. This mixture will react with water, steam or acids producing toxic and flammable vapors.
- **10.4 Conditions to avoid** Flames and heat sources.
- **10.5 Incompatible materials:**
Incompatible with strong oxidizers. The product is incompatible with oleum, chlorosulphonic acid, perchlorates, nitric acid and sulfur trioxide.
- **10.6 Hazardous decomposition products:**
When heated to decomposition emits highly toxic fumes of cyanides.
- **Additional information:** Sensitive to heat and light.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**
Harmful if swallowed, in contact with skin or if inhaled.

- **LD/LC50 values relevant for classification:**

Oral	LD50	617mg/Kg (mouse) <2000mg/kg (rat)
Dermal	LD50	980 mg/kg (rabbit)
Inhalative	LC50	3587 ppm (mouse)

- **Primary irritant effect:**
- **Skin corrosion/irritation**
Rabbit
Method - Equivalent or similar to OECD guideline 404
SCORING SYSTEM: Draize method
Result- not irritating
- **Serious eye damage/irritation**
Causes serious eye irritation.
Rabbit (New Zealand White)
Maximum mean total score (MMTS): 31 - 61 of max. 46 (mean) (Time point: 24 hours post-dose) (not fully reversible within: 21 days)
Method-Equivalent or similar to OECD Guideline 405
Result-Irritating
- **Respiratory or skin sensitisation**
Guinea pig (Hartley) male/female
Method-OECD Guideline 406 (Skin Sensitisation)
Buehler test
Induction: epicutaneous, occlusive

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*Challenge: epicutaneous, occlusive**Result-**No. with positive reactions:**1st reading: 3 out of 20 (test group); 24 h after chall.; dose: Undiluted acetonitrile**2nd reading: 1 out of 20 (test group);**48 h after chall.; dose: Undiluted Acetonitrile**1st reading: 2 out of 10 (negative control); 24 h after chall.; dose: Undiluted Acetonitrile**2nd reading: 2 out of 10 (negative control); 48 h after chall.; dose: Undiluted Acetonitrile**1st reading: 1 out of 10 (distilled water); 24 h after chall.; dose: undiluted**2nd reading: 2 out of 10 (distilled water); 48 h after chall.; dose: undiluted**1st reading: 10 out of 10 (positive control); 24 h after chall.; dose: 1%**2nd reading: 10 out of 10 (positive control); 48 h after chall.; dose: 1%**1st reading: 3 out of 5 (naive positive control); 24 h after chall.; dose: 1%**2nd reading: 0 out of 5 (naive positive control); 48 h after chall.; dose: 1%**Result-Not sensitising***• Subacute to chronic toxicity:***Respiratory sensitization-Repeated inhalation exposures of experimental animals to acetonitrile has not indicated the potential to cause respiratory sensitization.***• Additional toxicological information:***Acute toxicity: other routes**Acute intraperitoneal toxicity-Rat (Wistar or Nelson rats) female-**LD50: 0.85 - 7.96 mL/kg bw (female) (undiluted)**LD50: 3.89 - 5.62 g/kg bw (female) (in saline)**Acute intravenous toxicity-Rat (Wistar or Nelson rats) female-**LD50: 1.68 mL/kg bw (male)**LD50: 1.68 mL/kg bw (female)**Acute subcutaneous toxicity-mouse**LDLo: 600 - 700 mg/kg bw***• Toxicokinetics, metabolism and distribution***1. Species-rat (Sprague-Dawley) male**oral: gavage**Exposure regime: Single dose**Doses/conc.: LD50 dose (2460 mg/kg) of acetonitrile administered.**Results-metabolism: Cytochrome c oxidase activity and GSH levels of brain, liver and kidney of rats were not remarkably affected 1 hour after administration of an oral LD50 dose of acetonitrile, although cyanide levels were increased in these tissues.**2. Species-mouse (ICR) male**Route-intravenous**Exposure regime: Single dose**Doses/conc.: 684 uCi/kg, equivalent to 60uMol/kg**Results-**Distribution: Whole body autoradiography indicated that radioactivity was widely distributed throughout the body, with high levels in liver, kidney, and gastrointestinal tissues.**Excretion: The half-life of elimination of 2-14C-acetonitrile from blood and most tissues ranged from 5.52 hr in the liver to 8.45 hr in the blood.**3. in vitro study*

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*Route-human cadaver skin**Coverage (dermal absorption study): occlusive**Exposure regime: PERMEABILITY COEFFICIENT: until steady state was achieved**DETERMINATION OF SHORT-TERM ABSORPTION RATE: 10 and 60 MINUTES**Exposure area of 0.64 cm².**Doses/conc.: PERMEABILITY COEFFICIENT**Result-**0.2 % at 8 hours (Based on the slope at steady-state, the permeability coefficient was calculated to be 1.82×10^{-4} cm/h.)**≤ 0.7 % at 60 minutes (Following a 60-minute exposure to a finite application, the short-term penetration rate was calculated to be 66.0 µg equiv/cm²/h.)**% at 10 minutes (Following a 10-minute exposure to a finite application the short-term penetration rate was calculated to be 375.6 µg equiv/cm²/h.)***· Sensitisation***Sensitization**Type : Buehler test**Species : guinea pig**Result : Not sensitizing**Method : OECD Guide-line 406 " skin sensitization"**Type : Patch test**Species : guinea pig**Result : Not sensitizing**Method : OECD Guide-line 406 " skin sensitization"***· Repeated dose toxicity***Repeated dose toxicity: oral**Data waiving-Repeated oral exposure is not expected based on the uses of this substance.**Repeated dose toxicity: inhalation**1. Species-mouse (B6C3F1) male/female-subchronic (inhalation) (whole body)**Dose-0, 100, 200, 400, 800, 1600 ppm**Exposure: 13 weeks (6 hours/day, 5 days/week)**Result-**NOAEC: 200 ppm (female) based on: test mat. (mortality)**NOAEC: 400 ppm (male) based on: test mat. (mortality)**2. Species-mouse (B6C3F1) male/female-combined repeated dose and carcinogenicity (inhalation) (whole body)**Dose-0, 50, 100, 200 ppm (nominal conc.)**Exposure: 103 weeks (6 hours/day, 5 days/week)**Result-NOAEC: 200 ppm (nominal) (male/female) based on: test mat.***· CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)***Carcinogenicity-**Carcinogenicity: inhalation**1. Species-rat (Fischer 344) male/female**Route-whole body**Dose-0, 100, 200, or 400ppm (nominal conc.)**Result-NOAEC (toxicity): 400 ppm (nominal) (male/female) (highest level tested)*

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*Neoplastic effects: no effects**2. Species-Mouse (B6C3F1) male/female**Route-whole body**Dose-0, 50, 100, or 200 ppm (nominal)**Exposure: 103 weeks (6 hours/day, 5 days/week)**Result-NOAEC (toxicity): 200 ppm (nominal) (male/female) (highest level tested)**Neoplastic effects: no effects**Mutagenecity-**In vitro Genotoxicity**1. Method-bacterial reverse mutation assay (e.g. Ames test) (gene mutation)**Species-Salmonella typhimurium strains TA 97, 98, 100, 1535, 1537 (met. act.: with and without)**Doses: 0, 100, 333, 1000, 3333, 10000 ug/plate**Results-Negative(Salmonella typhimurium strains TA 97, 98, 100, 1535, 1537); met. act.: with and without; cytotoxicity: no, but tested up to limit concentrations**2. Method-mammalian cell gene mutation assay (gene mutation)**Chinese hamster Ovary (CHO) (met. act.: with and without)**Doses: Experiment 1 without activation: 11 concentrations ranging from 0.1 - 30 mg/ml**Results-Negative for Chinese hamster Ovary (CHO); met. act.: with and without; cytotoxicity: yes**3. Method-mammalian cell gene mutation assay (gene mutation)**Species-L5178Y mouse lymphoma cells (met. act.: with and without)**Doses: up to 5 ug/ml**Results-Negative(L5178Y mouse lymphoma cells); met. act.: with and without**In viivo Genotoxicity-**Method-EU Method B.12 (Mutagenicity - In Vivo Mammalian Erythrocyte Micronucleus Test)**Micronucleus assay (chromosome aberration)**Species-mouse (NMRI) male/female**Route-intraperitoneal**Dose-100 mg/kg (male); 125 mg/kg (female)**Results-Genotoxicity: negative (male/female); toxicity: yes**Toxicity to reproduction-**Species-Rat (Sprague-Dawley) male/female**Route-inhalation: vapour (whole body)**Dose-0, 150, 300, 600, 1200 ppm (nominal conc.)**Exposure: male: 42 days female: 35-41 days (6 hours daily)**Results-NOEC (P): 600 ppm (male/female) (In the 1200 ppm groups, fertility rate was slightly low, and oestrous cycles changed in some animals. Mortality also occurred.) Developmental Toxicity-**1. Species-rat (Sprague-Dawley)**Route-oral: gavage**Dose-0, 125, 190, and 275 mg/kg/day**Exposure: Days 6-19 of gestation (Single daily doses)**Result-**NOAEL (maternal toxicity): 190 mg/kg bw/day**NOAEL (embryotoxicity): 190 mg/kg bw/day*

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- NOAEL (teratogenicity): 275 mg/kg bw/day
 2. Species-rat (Sprague-Dawley)
 Route-inhalation: vapour (whole body)
 0, 100, 400, or 1200 ppm (nominal conc.)
 Exposure: 6 hours per day on gestation days 6-19
 Result-NOAEC (maternal toxicity): 100 ppm (nominal)
 NOAEC (developmental toxicity): \geq 1200 ppm (nominal)
- **Germ cell mutagenicity** No data available
 - **Carcinogenicity** No data available
 - **Reproductive toxicity** No data available
 - **STOT-single exposure** No data available
 - **STOT-repeated exposure** No data available
 - **Aspiration hazard** No data available

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:**
 - Short term toxicity fish
 - 1. Species-Pimephales promelas
 - Type of water-freshwater flow-through
 - Guideline not specified
 - Value-LC50 (96 h): 1640 mg/L
 - 2. Species-Oryzias latipes
 - Type of water-freshwater semi-static
 - OECD Guideline 203 (Fish, Acute Toxicity Test)
 - Value-LC50 (96 h): > 100 mg/L test mat. (nominal)
 - Long term toxicity Fish-
 - Species-Oryzias latipes
 - Type of water-flow-through freshwater
 - Value-NOEC (21 d): 102 mg/L test mat. (nominal) based on: mortality, toxicological symptoms, body weight, body length.
 - Short-term toxicity to aquatic invertebrates
 - 1. Species-Daphnia magna
 - Type of water-freshwater static
 - Value-LC50 (48 h): 3600 mg/L
 - 2. Species-Artemia salina
 - Type of water-static saltwater
 - Value-LC50 (24 h): 641 mg/L
 - LC50 (24 h): 521 mg/L
 - LC50 (24 h): 400 mg/L
 - Long-term toxicity to aquatic invertebrates
 - Daphnia magna freshwater static
 - Value-
 - NOEC (21 d): 160 mg/L based on: reproduction

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NOEC (21 d): 640 mg/L based on: mortality

LOEC (21 d): 320 mg/L based on: reproduction

LOEC (21 d): > 1300 mg/L based on: mortality

Algae and aquatic plants-

1. *Phaeodactylum tricornutum* (algae)

Type of water-saltwater static

Value-EC50 (72 h): 3560 mg/L test mat. (nominal) based on: yield

EC50 (72 h): 9696 mg/L test mat. (nominal) based on growth rate

NOEC (72 h): 400 mg/L test mat. (nominal) based on growth rate and yield

2. Species-*Microcystis aeruginosa* (algae)

Type of water-freshwater static

Value-TT (8 d): 520 mg/L based on: biomass

3. *Lemna minor* (aquatic plants) freshwater

Value-IC50 (96 h): 3663 mg/L (nominal)

NOEC (96 h): 1000 mg/L (nominal) based on: Chlorophyll a concentration

NOEC (96 h): 1000 mg/L (nominal) based on: growth rate

· **12.2 Persistence and degradability**

Biodegradation in water-

Estimated data-acetonitrile is readily biodegradable

Screening tests-

Result-readily biodegradable

% Degradation of test substance:

65 after 28 d (BOD) (Mean value)

84 after 28 d (TOC removal) (Mean value)

88 after 28 d (GC) (Mean value)

Biodegradation in soil-

A half-life range for acetonitrile in soil of 168 -672 hours (1 -4 weeks) has been estimated from data on aqueous aerobic biodegradation. further testing for degradation of this substance in soil is not justified on the basis that the substance is readily biodegradable.

· **12.3 Bioaccumulative potential**

BCF: 0.3 - 0.4

Result-Based on these results, low Kow values and high water solubility very low bioaccumulation potential is expected.

· **12.4 Mobility in soil**

Study type: adsorption (soil)

Estimated from the LogKow

Result-Adsorption coefficient: Koc: 0.3 - 16 (using the octanol-water partition coefficient, log Kow = -0.34. Estimated Koc values for acetonitrile range from 0.3 - 16 and indicate a low potential for adsorption to soils.

· **12.5 Results of PBT and vPvB assessment**

· **PBT:** Not PBT

· **vPvB:** Not vPvB

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- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**

- **Recommendation**

Disposal Consideration / Waste information: Avoid contact of spilt material and runoff with soil and surface waterways. Consult an environmental professional to determine if local, regional or national regulations would classify spilled or contaminated materials as hazardous waste. Use only approved transporters, recyclers, treatment, storage or disposal facilities. Comply with all local, regional, and national laws pertaining to waste management.

- **Uncleaned packaging:**

- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

- **14.1 UN-Number**

- **ADR, IMDG, IATA** 1648

- **14.2 UN proper shipping name**

- **ADR** 1648 ACETONITRILE
- **IMDG, IATA** ACETONITRILE

- **14.3 Transport hazard class(es)**

- **ADR, IMDG, IATA**



- **Class** 3 Flammable liquids.

- **Label** 3

- **14.4 Packing group**

- **ADR, IMDG, IATA** II

- **14.5 Environmental hazards:**

- **Marine pollutant:** No

- **14.6 Special precautions for user**

- **Warning:** Flammable liquids.

- **Danger code (Kemler):** 33

- **EMS Number:** F-E, S-D

- **14.7 Transport in bulk according to Annex**

- **II of Marpol and the IBC Code** Not applicable.

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· Transport/Additional information:**· ADR**

- | | |
|----------------------------------|-----|
| · Limited quantities (LQ) | LQ4 |
| · Transport category | 2 |
| · Tunnel restriction code | D/E |

- | | |
|---------------------------------|-----------------------------|
| · UN "Model Regulation": | UN1648, ACETONITRILE, 3, II |
|---------------------------------|-----------------------------|

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Labelling according to Regulation (EC) No 1272/2008**
The substance is classified and labelled according to the CLP regulation.
- **Hazard pictograms**
Please refer section 2



GHS02 GHS07

· Signal word

Danger

Danger

· Hazard statements

Please refer section 2

- 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.*
P241 *Use explosion-proof electrical/ventilating/lighting/equipment.*
P303+P361+P353 *IF ON SKIN (or hair): 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.*
P321 *Specific treatment (see on this label).*
P501 *Dispose of contents/container in accordance with local/regional/national/international regulations.*

- **Chemical safety assessment** *The CSR has been completed*

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- **National regulations:**
- **Other regulations, limitations and prohibitive regulations**
User to follow national laws and regulations.
- **Substances of very high concern (SVHC) according to REACH, Article 57**
The substance is not listed as SVHC.
- **15.2 Chemical safety assessment:**
A Chemical Safety Assessment has been carried out.

SECTION 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.

- **Department issuing MSDS:** *Product safety department.*
- **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 2: Flammable liquids, Hazard Category 2
Acute Tox. 4: Acute toxicity, Hazard Category 4
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
- **Sources**
Data is from ECHA registered dossier;
<https://echa.europa.eu/registration-dossier/-/registered-dossier/15440>
- *** Data compared to the previous version altered.**
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Section 3: Composition /Information on Ingredients
Section 4: First-aid measures
Section 5: Fire-fighting measures
Section 6: Accidental Release measures
Section 7: Handling and storage.
Section 8: Exposure Controls/Personal protection.
Section 9: Physical and Chemical properties.

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Section 11: Toxicological Information.
Section 12: Ecological Information.
Section 13 - Disposal Considerations
Section 15 - Regulatory Information
Section 16: Other information

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