Safety Data Sheet (SDS)
Aflatoxin B_1 solution - acetonitrile

Version 1, revision date: 30 August 2019
According to SANS 11014:20140/ ISO 11014: 2009
Generic SDS – No country specific data was used and no occupational exposure limit data

Section 1: Chemical product and company identification

Product Identifiers	**Product name:** Aflatoxin B_1 solution – acetonitrile **Product number:** NMISA_CRM_0012 **CAS#:** Not applicable **REACH No.:** A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.
Relevant identified uses of substances or mixture	Intended use: Laboratory chemical, for laboratory use only
Details of the supplier	**Company:** National Metrology Institute of South Africa **Address:** CSIR Scientia Campus, Meiring Naude Road, Brummeria, 0183 **Phone:** +27 12 841 2105 **Fax:** +286 509 5996 **E-mail:** organic@nmisa.org

Section 2: Hazard(s) identification

GHS Classification according to Regulation (EC) No 1272/2008	Flammable liquids (Category 2), H225 Highly flammable liquid and vapour. Acute toxicity, Oral (Category 4), H302 Harmful if swallowed. Acute toxicity, Inhalation (Category 4), H332 Harmful if inhaled. Acute toxicity, Dermal (Category 4), H312 Harmful in contact with skin. Eye irritation (Category 2), H319, Causes serious eye irritation
Labelling elements	
Label elements according to (EC) No 1227/2008	Pictogram

Signal word	Danger	
Hazard statements	H225	Highly flammable liquid and vapour.
	H302	Harmful if swallowed.
	H312	Harmful in contact with skin.
	H319	Causes serious eye irritation
	H332	Harmful if inhaled.
Precautionary statements	P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.	
	P233 + P235: Keep container tightly closed. Keep cool	
	P280: Wear protective gloves/ protective clothing	
	P302 + P352: IF ON SKIN: Wash with plenty of soap and water.	
	P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	
	P312: Call a POISON CENTER or a doctor/ physician if you feel unwell	
	P361: Remove/ Take off immediately all contaminated clothing	
	P363: Wash contaminated clothing before reuse	

Precautionary statements continued	P370 + P378 - In case of fire: Use carbon dioxide (CO2), powder, alcohol-resistant foam to extinguish P403: Store in a well-ventilated place. P405: Store locked up
Other hazards	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Section 3: Composition/ information on ingredients

Mixtures Aflatoxin B_1 in solution

Name	CAS no	EC no	Index - No	Classification	Concentration (%)
Acetonitrile (main component)	75-05-8	200-835-2	608-001-00-3	Refer to section 2	99.9

Section 4 – First-aid measures

General:	Consult a doctor and show this safety data sheet (SDS) to the medical practitioner in attendance
Description of first aid measures	
In case of skin contact:	Wash off with soap and plenty of water and consult a physician.
In case of eye contact:	Remove contact lenses if possible 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 clearly stating that acetonitrile has been ingested.
If inhaled:	If inhaled, move person into fresh air. If not breathing, give artificial respiration and consult a physician.
Most important symptoms and effects, both acute and delayed	Acute symptoms for expo sure to high concentrations: Respiratory and nasal mucous membrane irritation. Delayed symptoms for exposure to high concentrations: Feeling of fatigue; headache; dizziness and confusion; nausea; vomiting; increased salivation; changes in heart rate and respiratory difficulties. In case of inhalation of decomposition products, symptoms may be delayed. The exposed person should be kept under medical surveillance for 48 hours.
Indication of any immediate medical attention and special treatment needed	In all cases of exposure seek medical attention

Section 5: Fire-fighting measures

General:	Acetonitrile is highly flammable
Extinguishing media:	Use alcohol-resistant foam, dry chemical or carbon dioxide
Special hazards arising from substances or mixture	When heated to decomposition acetonitrile emits highly toxic fumes of cyanides and nitrogen oxides
Advice for fire-fighters:	Wear self-contained breathing apparatus and impervious protective suits, gloves, and boots
Further information	Use water spray to cool unopened containers

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Only for laboratory use For personal protection refer to section 8
Environmental precautions:	Prevent further release using suitable spill kit sorbents Do not let the product enter municipal drains, surface water or soil

Methods and materials for containment and cleaning up including recovery neutralisation and disposal:	Shut of any possible ignition source Absorb with an inert sorbent material, seal in an airtight container and disposed of in a safe manner in accordance with local/ international regulations.
References to other sections	Dispose of all contaminated material as described in section 13

Section 7: Handling and storage

Precautions for safe 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. Work only in a fume cupboard or under a fume extraction hood. Avoid contact with water
Storage:	This product should be stored at or below -20° C 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.

Section 8: Exposure controls and personal protection

Personal protective equipment:	
Eye/ face protection:	Wear safety glasses with side protection only use equipment that has been tested and approved under appropriate government regulations.
Skin protection:	Handle with suitable rubber/ nitrile or latex cloves. The cloves must be inspected prior to use and proper glove removal techniques, to avoid skin exposure, must be used. Hands should be washed and dried after use and in accordance with good laboratory practices.
Body protection:	Wear closed personal protective clothing with suitable protection against chemical exposure.
Respiratory protection	Wear a suitable respiratory protection device if the situation demands.
Technical measures:	Emergency eyewash fountain and safety shower should be available in the immediate vicinity of any potential exposure. Work areas must be provided with adequate ventilation and local exhaust ventilation.
Environmental exposure control	Do not let the product enter municipal drains, surface water or soil

Section 9: Physical and chemical properties

Appearance and odour:	Colourless liquid with aromatic odour
Odour threshold (low)	7×10^{-5} kg/m^3
pH:	No data available
Melting/ freezing point:	-44° C
Boiling point:	82° C
Flashpoint:	6°C (Open cup); 2°C (Closed cup)
Lower - upper explosive limits:	4.4 – 16 %
Vapour pressure:	9.9 kPa at 25° C
Vapour density:	1.42
Relative density:	0.78 g/cm^3
Solubility(ies):	Water soluble, soluble with most organic solvents including ethanol, benzene, toluene, acetone and diethyl ether.
n-octanol/ water partition coefficient (log K_{ow}):	-0.3
Auto-ignition temperature:	524° C
Decomposition temperature:	>120° C

Viscosity:	0.35 cP at 20° C
Explosive properties	Vapour is explosive in air within the explosion limits
Oxidising properties	No data available

Section 10: Stability and reactivity

Reactivity:	Nitrile reactive group; decomposes to highly toxic cyanides and nitrogen oxides; potentially explosive in contact with nitrogen-fluorine compounds
Chemical stability:	Stable under recommended storage conditions. Unstable on exposure to water, release of corrosive gasses and vapours consisting of ammonia and other nitrous vapours
Conditions to avoid:	Heat, flames, sparks and direct sunlight. Reacts violently with strong oxidants and reducing agents Exothermic reaction with strong acids Avoid contact with alkali metals and nitrogen-fluorine compounds
Incompatible materials:	Strong acids, oxidising and reducing agents, nitrogen-fluorine compounds and silver nitrate
Hazardous decomposition products:	Decomposition products known to be produced under fire conditions: carbon dioxide; carbon monoxide; nitrogen oxides and cyanides

Section 11: Toxicological information

Acute toxicity (data obtained from Acetonitrile brief profile – ECHA)	Human oral (DNEL): 600 µg/kg bw/day Human inhalation (DNEL): 22 mg/ m^3 Human dermal: No data available LD_{50} oral (mouse): 469 – 765 mg/kg bw LD_{50} inhalation (mouse 4h): 3 587 ppm LD_{50} dermal (rabbit): 2 000 mg/kg bw Other routes: no data available
Skin corrosion/ irritation/ sensitisation	No data available
Serious eye damage/ eye irritation	The vapour and liquid irritate the eyes
Respiratory sensitisation	Inhalation may cause dizziness, stupor, cramps and digestive disturbances, headaches, nausea, vomiting and irritation of mucous membranes
Germ cell mutagenicity	No data available
Carcinogenicity	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
Reproductive toxicity	No data available
Specific target organ toxicity - single exposure	No data available
Specific target organ toxicity - repeated exposure	No data available
Aspiration hazard	No data available
Additional Information	Treat as cyanide poisoning, onset of symptoms may be delayed depending on conversion to cyanide. Common symptoms of cyanide poisoning include headache, dizziness, rash and bluish cast to the skin and mucous membranes due to low oxygen levels in the blood.

Section 12: Ecological information

Toxicity	No data available
Persistence and degradability	No data available
Bioaccumulative potential	No bioaccumulation is to be expected
Mobility in soil	No data available

Results of PBT and vPvB assessment	This substance/mixture contains no components considered to be either persistent, bioaccumulative or toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Other adverse effects	No data available

Section 13: Disposal considerations

Product	Dispose in a safe manner in accordance with local/ international regulations.
Contaminated packaging or other consumables	Dispose of as described for unused product

Section 14: Transport information

UN number	ADR/RID: 1648 IMDG: 1648 IATA: 1648
UN proper shipping name	ADR/RID: ACETONITRILE, SOLUTION IMDG: ACETONITRILE, SOLUTION IATA: Acetonitrile, SOLUTION
Transport hazard class(es)	ADR/RID: 3 IMDG: 3 IATA: 3
Packaging group	ADR/RID: II IMDG: II IATA: II
Environmental hazards	ADR/RID: no IMDG Marine pollutant: no IATA: no
Special precautions for user	No data available

Section 15: Regulatory information

Safety, health and environmental regulations/ legislation specific for the substance or mixture	The SDS has been compiled in accordance with SANS 11014:20140/ ISO 11014: 2009 and SANS 10234:2008
Chemical safety assessment	For this product a chemical safety assessment was not carried out

Section 16: Other information

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South African National Standard: Safety data sheet for chemical products – Content and order of sections. SANS 11014:2010; ISO 11014:2009 Edition 1

South African National Standard: Globally harmonised system of classification and labelling of chemicals (GHS). SANS 10234:2008 Edition 1.1

South African national Standard: Supplement to SANS 10234: Edition 1 List of classification and labelling of chemicals in accordance with the Globally Harmonized System (GHS)

European Chemicals Agency https://echa.europa.eu

Agency for Toxic Substances and Disease Registry

International Agency for Research on Cancer (IARC) – summaries and evaluation