SAFETY DATA SHEET

Australian statement of hazardous nature : Classified as hazardous according to criteria of Safe Work Australia

Section 1 - Identification

Product Name	**Acetonitrile**
CAS No	75-05-8
Synonyms	AN; Methyl cyanide; Ethanenitrile

Product Code	**00170 XXACTORS31LI, NC2039935**
Address	ThermoFisher Scientific Australia Pty Ltd 5 Caribbean Drive, Scoresby VICTORIA 3179, Australia
Emergency Tel.	**CHEMTREC®** **03 9757 4559 or +613 9757 4559**
Telephone / Fax Numbers	Tel: 1300 735 292 Fax: 1800 067 639
E-mail address	ANZinfo@thermofisher.com

Recommended Use	Laboratory chemicals.
Uses advised against	This product contains one or more substance(s) on the Illicit Drug Precursors/Reagents list. Verify requirements related to using, handling and storing these substances. This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction. This product does not contain any substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern.

Section 2 - Hazard(s) Identification

Classification under Safe Work Australia

Classified as hazardous according to criteria of Safe Work Australia

Physical hazards

Flammable liquids	Category 2

Health hazards

Acute Oral Toxicity	Category 4
Acute Dermal Toxicity	Category 4
Acute Inhalation Toxicity - Vapors	Category 4
Serious Eye Damage/Eye Irritation	Category 2

Environmental hazards

No hazards identified

Label Elements

Flame

Exclamation Mark

Signal Word **Danger**

Hazard Statements
H225 - Highly flammable liquid and vapor
H302 + H312 + H332 - Harmful if swallowed, in contact with skin or if inhaled
H319 - Causes serious eye irritation

Precautionary Statements
P240 - Ground and bond container and receiving equipment
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P233 - Keep container tightly closed
P241 - Use explosion-proof electrical/ ventilating/ lighting equipment
P242 - Use non-sparking tools
P243 - Take action to prevent static discharges
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or 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
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P312 - Call a POISON CENTER or doctor if you feel unwell
P330 - Rinse mouth
P363 - Wash contaminated clothing before reuse
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish
P403 + P235 - Store in a well-ventilated place. Keep cool
P501 - Dispose of contents/ container to an approved waste disposal plant

Other information

Toxicity to Soil Dwelling Organisms
Toxic to terrestrial vertebrates

Section 3 - Composition and Information on Ingredients

Component	CAS No	Weight %
Acetonitrile	75-05-8	>95

Section 4 - First Aid Measures

Inhalation Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Ingestion Do NOT induce vomiting. Call a physician or poison control center immediately.

Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
General Advice	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
Self-Protection of the First Aider	Remove all sources of ignition. Use personal protective equipment as required. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.
First Aid Facilities	Eyewash, safety shower and washroom.
Most important symptoms and effects	Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Metabolism may release cyanide, which may result in headache, dizziness, weakness, collapse, unconsciousness, and possible death: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting
Notes to Physician	Treat symptomatically. The effects may be delayed therefore medical observation is essential. Effects may be delayed 7 to 10 hours. May be metabolized to cyanide which in turn acts by inhibiting cytochrome oxidase impairing cellular respiration.

Section 5 - Fire Fighting Measures

Suitable Extinguishing Media
Water spray. CO_2, dry chemical, dry sand, alcohol-resistant foam. Water mist may be used to cool closed containers.

Extinguishing media which must not be used for safety reasons
Do not use a solid water stream as it may scatter and spread fire.

Hazardous Decomposition Products
Hydrogen cyanide (hydrocyanic acid), Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO_2).

Specific Hazards Arising from the Chemical
Flammable. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Vapors may form explosive mixtures with air.

Special protective equipment and precautions for fire fighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

Section 6 - Accidental Release Measures

Emergency procedures
Remove all sources of ignition. Take precautionary measures against static discharges. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Use personal protective equipment as required.

Environmental Precautions
Should not be released into the environment. See Section 12 for additional Ecological Information.

Methods for Containment and Clean Up

Clean-up methods - small spillage
Remove all sources of ignition. Take precautionary measures against static discharges. Provide adequate ventilation. Use spark-proof tools and explosion-proof equipment. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Prevent product from entering drains.

Clean-up methods - large spillage
Typically only supplied is small quantiites as packaged goods.
If extremely toxic or used in larger quantities ensure a spillage action plan is in place. Evacuate area. Control the source and/or contain the spill if safe and able to do so. Use temporary diking, sand bags, dry sand, earth or proprietary booms/absorbent pads if available. Obtain advice on containment, neutralisation and clean-up from local emergency responders.

Reference to Other Sections
Refer to protective measures listed in Sections 8 and 13.

Section 7 - Handling and Storage

Precautions for Safe Handling
Wear personal protective equipment/face protection. Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Do not get in eyes, on skin, or on clothing. Do not breathe mist/vapors/spray. Use spark-proof tools and explosion-proof equipment. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

Conditions for Safe Storage, Including any Incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat, sparks and flame. Flammables area.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals
AS 1940-2004 - The storage and handling of flammable and combustible liquids

Section 8 - Exposure Controls and Personal Protection

Exposure limits
AUS - Exposure Standards for Atmospheric Contaminants in the Occupational Environment - Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:3008(1995)] Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)] updated in August, 2005. Safe Work Australia **ACGIH** - Threshold Limit Values - Ceiling (TLV-C) guidelines by the American Conference of Governmental Industrial Hygienists (ACGIH) for controlling worker exposure to airborne chemical concentrations in the workplace. **UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020. **DE** - MAK and BAT values of Hazardous Chemical Compounds in the Work Area. Published by German Research Foundation on July 1, 2011

Component	Australia	New Zealand WEL	ACGIH TLV	The United Kingdom	Germany
Acetonitrile	STEL: 60 ppm STEL: 101 mg/m³ TWA: 40 ppm TWA: 67 mg/m³	TWA: 40 ppm TWA: 67 mg/m³ STEL: 60 ppm STEL: 101 mg/m³ Skin	TWA: 20 ppm Skin	STEL: 60 ppm 15 min STEL: 102 mg/m³ 15 min TWA: 40 ppm 8 hr TWA: 68 mg/m³ 8 hr	TWA: 10 ppm (8 Stunden). AGW - exposure factor 2 TWA: 17 mg/m³ (8 Stunden). AGW - exposure factor 2 TWA: 10 ppm (8 Stunden). MAK TWA: 17 mg/m³ (8 Stunden). MAK TWA: 2 mg/m³ (8 Stunden). MAK Höhepunkt: 20 ppm Höhepunkt: 34 mg/m³ Höhepunkt: 2 mg/m³ Haut

Biological limit values
This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Exposure Controls
Engineering Measures
Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting equipment.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection Goggles (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial applications)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	AUS/NZ Standard	Glove comments
Butyl rubber	> 480 minutes	0.35 mm	AS/NZS 2161	As tested under EN374-3 Determination of Resistance to Permeation by Chemicals
Neoprene gloves	< 60 minutes	0.45 mm		

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure

Repiratory Protection Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use and maintenance of repiratory protective devices

Recommended Filter type: low boiling organic solvent Type AX Brown conforming to EN371 (or AUS/NZ equivalent)

Recommended half mask:- Valve filtering: EN405 or Half mask: EN140 plus filter, EN 141 (or AUS/NZ equivalent)

Hygiene Measures When using do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing.

Environmental exposure controls No information available.

Section 9 - Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Colorless	
Physical State	Liquid	
Odor	aromatic	
Odor Threshold	170 ppm	
pH	No information available	
Melting Point/Range	-46 °C / -50.8 °F	
Softening Point	No data available	
Boiling Point/Range	81 - 82 °C / 177.8 - 179.6 °F	@ 760 mmHg
Flash Point	12.8 °C / 55 °F	**Method -** No information available
Evaporation Rate	5.79	(Butyl Acetate = 1.0)
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	**Lower** 3 vol % **Upper** 16 vol %	
Vapor Pressure	97 mbar @ 20 °C	
Vapor Density	1.42	(Air = 1.0)
Specific Gravity / Density	0.781	
Bulk Density	Not applicable	Liquid
Water Solubility	Miscible	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		

Component	log Pow
Acetonitrile	-0.34

Autoignition Temperature	525 °C / 977 °F	
Decomposition Temperature	No data available	
Viscosity	0.36 cP at 20 °C	
Explosive Properties	Not explosive	Vapors may form explosive mixtures with air
Oxidizing Properties	Not oxidising	

Other information

Molecular Formula	C2 H3 N
Molecular Weight	41.05

Section 10 - Stability and Reactivity

Reactivity None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products, Keep away from open flames, hot surfaces and sources of ignition, Exposure to moisture.

Incompatible Materials Strong oxidizing agents, Strong acids, Reducing Agent, Bases.

Hazardous Decomposition Products Hydrogen cyanide (hydrocyanic acid). Nitrogen oxides (NOx). Carbon monoxide (CO). Carbon dioxide (CO_2).

Hazardous Polymerization Hazardous polymerization does not occur.

Section 11 - Toxicological Information

Information on Toxicological Effects

Product Information

(a) acute toxicity;

Oral	Category 4
Dermal	Category 4
Inhalation	Category 4

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Acetonitrile	450-787 mg/kg (Rat) 2460 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	LC50 = 3587 ppm (6.022 mg/l) (Mouse) 4h LC50 = 16,000 ppm (26.8 mg/l) (Rat) 4h

(b) skin corrosion/irritation; Based on available data, the classification criteria are not met

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;

Respiratory	Based on available data, the classification criteria are not met
Skin	Based on available data, the classification criteria are not met

(e) germ cell mutagenicity; Based on available data, the classification criteria are not met

(f) carcinogenicity; Based on available data, the classification criteria are not met

	There are no known carcinogenic chemicals in this product
(g) reproductive toxicity;	Based on available data, the classification criteria are not met
(h) STOT-single exposure;	Based on available data, the classification criteria are not met
(i) STOT-repeated exposure;	Based on available data, the classification criteria are not met
Target Organs	None known.
(j) aspiration hazard;	Based on available data, the classification criteria are not met
Symptoms / effects,both acute and delayed	Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Metabolism may release cyanide, which may result in headache, dizziness, weakness, collapse, unconsciousness, and possible death: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

Section 12 - Ecological Information

Ecotoxicity effects .

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Acetonitrile	LC50: = 1850 mg/L, 96h static (Lepomis macrochirus) LC50: = 1000 mg/L, 96h static (Pimephales promelas) LC50: 1600 - 1690 mg/L, 96h flow-through (Pimephales promelas) LC50: = 1650 mg/L, 96h static (Poecilia reticulata)			EC50 = 28000 mg/L 48 h EC50 = 73 mg/L 24 h EC50 = 7500 mg/L 15 h

Persistence and Degradability

Persistence	Persistence is unlikely, based on information available.
Bioaccumulative Potential	Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Acetonitrile	-0.34	No data available

Mobility	The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces. Will likely be mobile in the environment due to its volatility Disperses rapidly in air
Endocrine Disruptor Information	This product does not contain any known or suspected endocrine disruptors
Persistent Organic Pollutant	This product does not contain any known or suspected substance
Ozone Depletion Potential	This product does not contain any known or suspected substance

Section 13 - Disposal Considerations

Waste from Residues/Unused Products	Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations.
Contaminated Packaging	Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.
Other Information	Chemical wastes should be disposed through a licensed commercial waste collection service. Waste codes should be assigned by the user based on the application for which

the product was used. Do not flush to sewer. Can be landfilled or incinerated, when in compliance with local regulations.

Section 14 - Transport Information

IMDG/IMO

UN-No	UN1648
Proper Shipping Name	ACETONITRILE
Hazard Class	3
Packing Group	II

ADG

UN-No	UN1648
Proper Shipping Name	ACETONITRILE
Hazard Class	3
Packing Group	II

Component	Hazchem Code
Acetonitrile 75-05-8 (>95)	2YE

IATA

UN-No	UN1648
Proper Shipping Name	ACETONITRILE
Hazard Class	3
Packing Group	II

Environmental hazards No hazards identified

Special Precautions No special precautions required

Additional information None known

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National Regulations **Australia**

See section 8 for national exposure control parameters.

Standard for the Uniform Scheduling of Medicines and Poisons
No poison schedule number allocated.

Australian Industrial Chemicals Introduction Scheme (AICIS)

Component	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information
Acetonitrile - 75-05-8	Present	-

Australian - Illicit Drug Precursors/Reagents Substance List
This product contains one or more substance(s) on the Illicit Drug Precursors/Reagents list. Verify requirements related to using,

handling and storing these substances.

Chemicals of Security Concern
This product does not contain any substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern

Component	Australian - Illicit Drug Precursors/Reagents Substance List	Chemicals of Security Concern
Acetonitrile - 75-05-8	Category 3	

Legend
Category 3 - Chemicals and apparatus that may be used in the illicit production of drugs. Purchases from this list should alert companies or organizations to seek further indicators of any suspicious orders or enquiries. No official reporting is required for items on this list unless considered warranted

National pollutant inventory Subject to reporting requirements

Component	National pollutant inventory
Acetonitrile - 75-05-8	10 tonne/yr. Threshold category 1

Prohibition or notification/licensing requirements
Shown below are details of specific prohibition/notifications or licencing requirements when they apply.

This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction.

International Inventories

Component	AICS	NZIoC	EINECS	ELINCS	TSCA	DSL	NDSL	PICCS	ENCS	ISHL	IECSC	KECL
Acetonitrile	X	X	200-835-2	-	X	X	-	X	X	X	X	KE-00067

Legend: X - Listed. '-' - Not Listed. **KECL** - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

International Regulations

Ozone Depletion Potential This product does not contain any known or suspected substance

Persistent Organic Pollutant This product does not contain any known or suspected substance

Rotterdam Convention (PIC) Not applicable

Basel convention on the control of transboundary movements of hazardous wastes and their dispoal
Not applicable.

Component	Basel Convention (Hazardous Waste)	Australian Hazardous Waste Act - Categories of Wastes to Be Controlled
Acetonitrile - 75-05-8		Y38

Component	CAS No	OECD HPV	Restriction of Hazardous Substances (RoHS)	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Acetonitrile	75-05-8	Listed	Not applicable	Not applicable	Not applicable

Authorisation/Restrictions according to EU REACH

Component	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Acetonitrile	-	Use restricted. See item 75. (see link for restriction details)	-

https://echa.europa.eu/substances-restricted-under-reach

Section 16 - Other Information

Legend

AICS - Australian Inventory of Chemical Substances
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
IECSC - Chinese Inventory of Existing Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
TWA - Time Weighted Average
IARC - International Agency for Research on Cancer
ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
MARPOL - International Convention for the Prevention of Pollution from Ships
NZS 5433:2012 - Transport of Dangerous Goods on Land
LD50 - Lethal Dose 50%
EC50 - Effective Concentration 50%
WEL - Workplace Exposure Limit
DNEL - Derived No Effect Level
POW - Partition coefficient Octanol:Water
vPvB - very Persistent, very Bioaccumulative
VOC - (Volatile Organic Compound)

NZIoC - New Zealand Inventory of Chemicals
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japanese Existing and New Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances
CAS - Chemical Abstracts Service
ACGIH - American Conference of Governmental Industrial Hygienists Predicted No Effect Concentration (PNEC)
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
ADG Australian Code for the Transport of Dangerous Goods by Road and Rail
OECD - Organisation for Economic Co-operation and Development
LC50 - Lethal Concentration 50%
ATE - Acute Toxicity Estimate
RPE - Respiratory Protective Equipment
NOEC - No Observed Effect Concentration
BCF - Bioconcentration factor
PBT - Persistent, Bioaccumulative, Toxic

Key literature references and sources for data
https://echa.europa.eu/information-on-chemicals
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Training Advice
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.
Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts.
Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.
First aid for chemical exposure, including the use of eye wash and safety showers.
Chemical incident response training.

Revision Date 21-Nov-2022
Revision Summary Not applicable.

This Safety Data Sheet (SDS) is prepared in accordance to and complies with the requirements of Safe Work Australia - Work Health and Safety Regulations (WHS Regulations).

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 and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet