



SAFETY DATA SHEET

Acetonitrile

Date Issued: 5/5/2015

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1. PRODUCT and COMPANY IDENTIFICATION

PRODUCT NAME Acetonitrile	24 HR. EMERGENCY TELEPHONE NUMBERS
GENERAL USE: Laboratory chemicals, Manufacture of substances	Emergency Phone: 803-778-0264
GENERIC NAME: Acetonitrile	For emergency, spill, leak, fire, exposure or accident, call: CHEMTREC: 1-800-424-9300 Outside of the United States, call: 703-527-3887 (collect calls accepted)
DISTRIBUTOR:	
Nova Molecular Technologies, Inc.	
208 South Magnolia Street	
Sumter, SC 29150	

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION

Classification of the substance or mixture	GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225 Acute toxicity, Oral (Category 4), H302 Acute toxicity, Inhalation (Category 4), H332 Acute toxicity, Dermal (Category 4), H312 Eye irritation (Category 2A), H319	
For the full text of the H-Statements mentioned in this Section, see Section 16.	

GHS LABEL	
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 statement(s)	
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.

P280	Wear protective gloves/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P312	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P363	Wash contaminated clothing before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403 + P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/ container to an approved waste disposal plant.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt. %	CAS
Acetonitrile	100 %	75-05-8

4. FIRST AID MEASURES

General Advice:	Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area
EYES:	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
SKIN:	Take off immediately all contaminated clothing. Wash off with soap and plenty of water. Consult a physician.
INGESTION:	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
INHALATION:	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
Most important symptoms and effects, both acute and delayed	May cause headache and dizziness. The following applies to cyanogen compounds/ nitriles in general: utmost caution! Release of hydrocyanic acid is possible - blockade of cellular respiration. Cardiovascular disorders, dyspnea, unconsciousness. irritant effects, Nausea, Vomiting, Convulsions, Shortness of breath, respiratory arrest, cardiac arrest, Unconsciousness
Indication of any immediate medical attention and special treatment needed	No data available

5. FIRE FIGHTING MEASURES

Extinguishing media	
Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special hazards arising from the substance or mixture	Combustible. Pay attention to flashback. Forms explosive mixtures with air at ambient temperatures. Vapors are heavier than air and may spread along floors. Development of hazardous combustion gases or vapors possible in the event of fire. Fire may cause evolution of: nitrogen oxides, Hydrogen cyanide (hydrocyanic acid)
Advice for firefighters	Special protective equipment for fire-fighters Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing. Further information Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.
Further information	Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. For personal protection see section 8.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Methods and materials for containment and cleaning up	Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).
Reference to other sections	For disposal see section 13.
SPECIAL PROTECTIVE EQUIPMENT: EMERGENCY & NON-EMERGENCY RESPONDERS	Refer to Section 13 of this SDS for appropriate exposure controls and personal protective equipment (PPE).

7. HANDLING AND STORAGE

GENERAL PROCEDURES:	Handle in accordance with good industrial hygiene and safety practices. These practices include but are not limited to avoiding unnecessary exposure and prompt removal of material from eyes, skin and clothing. Do not breathe material. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. If needed, take first aid actions as indicated in Section 4 of this SDS.
HANDLING:	Use only with adequate ventilation. Wear appropriate personal protective equipment and use exposure controls as indicated in Section 8 of this SDS. Avoid contact with skin and eyes. Avoid breathing gas. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Do not reuse container. Remove contaminated clothing immediately. Wash with soap and water after working with this product.

STORAGE:	Keep in airtight container away from all heat sources. Store in a segregated and approved area. Store in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Keep container in a well-ventilated area. Store away from incompatible materials. Store in the original container or an approved alternative made from compatible material. Do not store in unlabeled containers. Treat empty containers in a similar fashion as residual product may exist. Use appropriate containment to avoid environmental contamination.
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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)					
		EXPOSURE LIMITS			
		OSHA PEL		ACGIH TLV	
Chemical Name		ppm	mg/m ³	ppm	mg/m
Acetonitrile	TWA	40	70	20	N/E
	STEL	N/E	N/E	N/E	N/E
	TWA				
	STEL				

ENGINEERING CONTROLS:	Provide adequate general and local exhaust ventilation to meet exposure limit requirements. Provide readily accessible eye wash stations and emergency showers. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.
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PERSONAL PROTECTIVE EQUIPMENT	
Eye/face protection	Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Skin protection	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Full contact	Material: butyl-rubber Minimum layer thickness: 0.3 mm Break through time: 480 min Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)
Splash contact	Material: butyl-rubber Minimum layer thickness: 0.3 mm Break through time: 480 min Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)
Respiratory protection	Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi- purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

WORK HYGIENIC PRACTICES:	Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove contaminated clothing and launder before reuse. Shower after work using plenty of soap and water.
Other protective equipment:	Flame retardant antistatic protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

a. Appearance	Form: liquid, clear Color: colorless
b. Odor	Ether-like
c. Odor Threshold	No data available
d. pH	No data available
e. Melting point/freezing point	Melting point/range: -48 °C (-54 °F)
f. Initial boiling point and boiling range	81 - 82 °C (178 - 180 °F)
g. Flash point	2.0 °C (35.6 °F) - closed cup
h. Evaporation rate	5.8
i. Flammability (solid, gas)	No data available
j. Upper/lower flammability or explosion limits	Upper explosion limit: 16%(V) Lower explosion limit: 3%(V)
k. Vapor pressure	73.18 hPa (54.89 mmHg) at 15 °C (59 °F) 121.44 hPa (91.09 mmHg) at 25 °C (77 °F) 413.23 hPa (309.95 mmHg) at 55 °C (131 °F) 98.64 hPa (73.99 mmHg) at 20 °C (68 °F)
l. Vapor density	1.42 - (Air = 1.0)
m. Relative density	0.786 g/mL at 25 °C (77 °F)
n. Water solubility	Completely soluble
o. Partition coefficient: n-octanol/water	Log Pow: -0.54 at 25 °C (77 °F)
p. Auto ignition temperature	524.0 °C (975.2 °F)
q. Decomposition temperature	No data available
r. Viscosity	No data available
s. Explosive properties	Not classified as explosive.
t. Oxidizing properties	The substance or mixture is not classified as oxidizing
Other safety information	
Surface tension	Relative vapor density 2.56 - (Air = 1.0)

10. STABILITY AND REACTIVITY

Reactivity	Vapors may form explosive mixture with air.
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Violent reactions possible with: Strong bases, strong reducing agents Risk of explosion with: nitrates, perchlorates, perchloric acid conc. sulfuric acid, with, Heat. Risk of ignition or formation of inflammable gases or vapors with: Oxidizing agents, Nitric acid nitrogen dioxide, with, Catalyst Generates dangerous gases or fumes in contact with: Acids

Conditions to avoid	Heat, flames and sparks. Extremes of temperature and direct sunlight.
Incompatible materials	acids, Bases, oxidizing agents, Reducing agents, Alkali metals, rubber, various plastics
Hazardous decomposition products	Other decomposition products - No data available In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

ACUTE

Chemical Name	ORAL LD ₅₀ (rat)	DERMAL LD ₅₀ (rabbit)	INHALATION LC ₅₀ (rat)
Acetonitrile	1320-6690 mg/kg	>2000 mg/kg	4 h - 26.8 mg/l

Skin corrosion/irritation	Skin - Rabbit Result: No skin irritation (OECD Test Guideline 404)
Serious eye damage/eye irritation	Eyes - Rabbit Result: Irritating to eyes. (OECD Test Guideline 405)
Respiratory or skin sensitization	Buehler Test - Guinea pig Did not cause sensitization on laboratory animals. (OECD Test Guideline 406)
Germ cell mutagenicity	Hamster ovary Result: negative Mutation in mammalian somatic cells Ames test S. typhimurium Result Equivocal Evidence. Sister chromatid exchange Mutagenicity (micronucleus test) Mouse Result: Positive results were obtained in some in vivo tests.
Carcinogenicity	No evidence of carcinogenicity in animal studies. 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. NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is

	identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity	No data available Animal testing did not show any effects on fertility.
Specific target organ toxicity - single exposure	The substance or mixture is not classified as specific target organ toxicant, single exposure.
Specific target organ toxicity - repeated exposure	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Aspiration hazard	No aspiration toxicity classification
Additional Information	RTECS: AL7700000 Treat as cyanide poisoning., Always have on hand a cyanide first-aid kit, together with proper instructions., The onset of symptoms is generally delayed pending conversion to cyanide., Nausea, Vomiting, Diarrhea, Headache, Dizziness, Rash, Cyanosis, excitement, depression, Drowsiness, impaired judgment, Lack of coordination, stupor, death

12. ECOLOGICAL INFORMATION

Toxicity	
Toxicity to fish	LC50 – Pimephales Promelas (fathead Minnow) – 1640.00 mg/l – 96 h NOEC – Oryzias latipes – 120 mg/l – 21 day
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 3,600 mg/l - 48 h (OECD Test Guideline 202) NOEC - Daphnia magna (Water flea) - 160 mg/l - 21 d
Toxicity to algae	No data available
Persistence and degradability	No data available
Biodegradability	Result 84% Readily biodegradable (OECD Test Guideline 301C)
Bio-accumulative potential	No bioaccumulation is to be expected (log Pow <= 4).
Mobility in soil	Not expected to adsorb on soil.
Results of PBT and vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
Other adverse effects	No data available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods	
Product	The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

DOT (US)					
UN number:	1648	Class:	3	Packing Group:	II
Proper shipping name:	Acetonitrile				
Reportable Quantity (RQ):	5000 lbs.				
Poison inhalation hazard:	No				

IMDG					
UN number:	1648	Class:	3	Packing Group:	II
Proper shipping name:	Acetonitrile				
				EMS-No:	F-E, S-D

IATA					
UN number:	1648	Class:	3	Packing Group:	II
Proper shipping name:	Acetonitrile				

15. REGULATORY

Information United States	
SARA 302 Components	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components	The following components are subject to reporting levels established by SARA Title III, Section 313:
SARA 311/312 Components	Fire Hazard, Acute Health Hazard
Massachusetts Right To Know Components	Acetonitrile
Pennsylvania Right To Know Components	Acetonitrile
New Jersey Right To Know Components	Acetonitrile
California Prop. 65 Components	This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER

INFORMATION	
Full text of H-Statements referred to under sections 2 and 3.	
Acute Tox	Acute Toxicity
Eye Irrit.	Eye Irritation
Flam Liq.	Flammable Liquids
H225	Highly flammable liquids
H302	Harmful if swallowed
H302 + H312 + H332	Harmful if swallowed, in contact with skin or inhaled
H312	Harmful in contact with skin
HMIS RATING	

Health Hazard	2
Chronic health hazard	*
Flammability	3
Physical hazard	0
NFPA RATING	
Health Hazard	2
Fire Hazard	3
Reactivity hazard	0

DATA**SOURCES:****REFERENCES**

ACGIH. 2013 Guide to Occupational Exposure Values. Cincinnati, OH. Signature Publications, 2013.

Forsberg, K.; Mansdorf, S.Z. Quick Selection Guide to Chemical Protective Clothing. Fifth Edition. Hoboken, NJ. John Wiley & Sons, 2007.

Lide, D.R. CRC Handbook of Chemistry and Physics. 88th Edition. Boca Raton, FL. CRC Press, 2008.

UNECE. Globally Harmonized System of Classification and Labeling of Chemicals (GHS). Third Revised Edition. New York and Geneva. United Nations, 2009.

US DOT; Pipeline and Hazardous Materials Safety Administration. 2008 Emergency Response Guidebook. Neenah, WI. J.J. Keller & Associates, Inc. 2008.

US EPA. Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-To-Know Act (EPCRA) and Section 112(r) of the Clean Air Act. [Available] Online: <http://www.epa.gov/ceppo/pubs/title3.pdf>. Retrieved 02/02/2011.

ADDITIONAL SDS INFORMATION:**KEY / LEGEND**

ACGIH - American Conference of Governmental Industrial Hygienists

ADR - Agreement on Dangerous Goods by Road

CAA - Clean Air Act

CAS - Chemical Abstracts Service Registry Number

CDG - Carriage of Dangerous Goods By Road and Rail Manual

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act

CFR - Code of Federal Regulations

EINECS - European Inventory of Existing Chemical Substances Registry Number

ERG - Emergency Response Guidebook

EPCRA - Emergency Planning and Community Right-to-Know Act

GHS - Globally Harmonized System of Classification and Labeling of Chemicals

IARC - International Agency for Research on Cancer

IATA - International Air Transport Association

ICAO - International Civil Aviation Organization

IMDG - International Maritime Dangerous Goods Code

IMO - International Maritime Organization

N/E - Not Established

NTP - National Toxicology Program

OSHA - Occupational Safety and Health Administration

PEL - Permissible Exposure Limit

PPE - Personal Protective Equipment

RCRA - Resource Conservation and Recovery Act

RID - Regulations Concerning the International Transport of Dangerous Goods by Rail

RQ - Reportable Quantities

SARA - Superfund Amendments and Reauthorization Act of 1986

SDS - Safety Data Sheet

TCC - Tag Closed Cup

TDG - Transportation of Dangerous Goods

TLV - Threshold Limit Value

TSCA - Toxic Substance Control Act

UN/NA - United Nations / North American Number

UNECE - United Nations Economic Commission for Europe
US DOT - United States Department of Transportation
US EPA - United States Environmental Protection Agency
Vol. - Volume
WHMIS - Workplace Hazardous Materials Information System

GENERAL STATEMENTS: Other information not included anywhere else in this SDS is included in this section if, in fact, such data exists.

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