

 208 South Magnolia Street Sumter, SC 29150 Customer Service 803-778-0264	SAFETY DATA SHEET Nova Molecular Technologies, Inc.	
	Methyl Ethyl Ketone	Date Issued: 5 May 2015


1. PRODUCT and COMPANY IDENTIFICATION

PRODUCT NAME: Methyl ethyl ketone	24 HR. EMERGENCY TELEPHONE NUMBERS
GENERAL USE: Industrial use, Manufacture of substances	Emergency Phone: 803-778-0264
GENERIC NAME: MEK, Methyl ethyl ketone, 2-Butanone	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	
Eye irritation (Category 2A), H319	
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336	
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.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
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.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/ eye protection/ face protection.
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. Immediately call a POISON CENTER or doctor/ physician.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt. %	CAS
2-Butanone	100 %	78-93-3

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:	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	The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11
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	Carbon oxides Flash back possible over considerable distance. Container explosion may occur under fire conditions.
Advice for firefighters	Wear self-contained breathing apparatus for firefighting if necessary.
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.

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 ³
2-Butanone	TWA	200	590	200	N/E
	STEL	N/E	N/E	300	N/E

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.
Splash contact	Splash contact Material: butyl-rubber Minimum layer thickness: 0.3 mm Break through time: 292 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.
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9. PHYSICAL AND CHEMICAL PROPERTIES

a. Appearance	Form: liquid, clear Color: colorless
b. Odor	No data available
c. Odor Threshold	No data available
d. pH	No data available
e. Melting point/freezing point	-86.99 °C (-124.58 °F)
f. Initial boiling point and boiling range	80 °C (176 °F) - lit.
g. Flash point	-2.99 °C (26.62 °F) - closed cup
h. Evaporation rate	No data available
i. Flammability (solid, gas)	No data available
j. Upper/lower flammability or explosion limits	Upper explosion limit: 10.1%(V) Lower explosion limit: 1.8%(V)
k. Vapor pressure	95 hPa (71 mmHg) at 20 °C (68 °F)
l. Vapor density	2.49 - (Air = 1.0)
m. Relative density	0.805 g/mL at 25 °C (77 °F)
n. Water solubility	soluble
o. Partition coefficient: n-octanol/water	log Pow: 0.29
p. Auto ignition temperature	No data available
q. Decomposition temperature	No data available
r. Viscosity	No data available
s. Explosive properties	No data available
t. Oxidizing properties	No data available
Other safety information	
Surface tension	24.6 mN/m at 20 °C (68 °F)
Relative vapor density	2.49 - (Air = 1.0)

10. STABILITY AND REACTIVITY

Reactivity	No data available
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Vapors may form explosive mixture with air.
Conditions to avoid	Exposure to moisture, heat, flames and sparks.
Incompatible materials	Oxidizing agents, Strong reducing agents
Hazardous decomposition products	Other decomposition products - No data available In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

ACUTE

Chemical Name	ORAL LD50 (rat)	DERMAL LD50 (rabbit)	INHALATION LC50 (rat)
2-Butanone	2,737 mg/kg	6,480 mg/kg	4 h - 32,000 mg/m ³

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	No data available
Germ cell mutagenicity	No data available
Carcinogenicity	This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification. 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. ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH. 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
Specific target organ toxicity - single exposure	May cause drowsiness or dizziness
Specific target organ toxicity - repeated exposure	No data available
Aspiration hazard	No data available
Additional Information	RTECS: EL6475000 Central nervous system depression, Gastrointestinal disturbance, narcosis Livers - Irregularities - Based on Human Evidence Livers - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

Toxicity	
Toxicity to fish	mortality NOEC - Cyprinodon variegatus (sheep head minnow) - 400 mg/l - 96 h LC50 - Pimephales promelas (fathead minnow) - 3,130 - 3,320 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	LC50 - Daphnia magna (Water flea) - > 520 mg/l - 48 h
Toxicity to algae	No data available
Persistence and degradability	No data available
Biodegradability	No data available
Bio-accumulative potential	No data available
Mobility in soil	No data available
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	Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging	Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)					
UN number:	1193	Class:	3	Packing Group:	II
Proper shipping name:	Ethyl methyl ketone				
Reportable Quantity (RQ):	5000 lbs.				
Poison inhalation hazard:	No				

IMDG							
UN number:	1193	Class:	3	Packing Group:	II	EMS-No:	F-E, S-D
Proper shipping name:	ETHYL METHYL KETONE						

IATA							
UN number:	1193	Class:	3	Packing Group:	II		
Proper shipping name:	Ethyl methyl ketone						

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, Chronic Health Hazard
Massachusetts Right To Know Components	Ethyl methyl ketone
Pennsylvania Right To Know Components	Ethyl methyl ketone
New Jersey Right To Know Components	Ethyl methyl ketone
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.	
Eye Irrit.	Eye irritation
Flam Liq.	Flammable Liquid
H225	Highly flammable liquid and vapor
H319	Causes serious eye irritation
H336	May cause drowsiness or dizziness
STOT SE	Specific target organ toxicity – single exposure
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**

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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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