PURE322

Version 1.0

Revision Date 05/15/2018

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	*PURE322*
Tradename/Synonym	:	Dimethyl ether
Product Use	:	Propellant, For industrial use only.
Restrictions on use	:	Do not use product for anything outside of the above specified uses
Manufacturer/Supplier	:	Metavega Corp. 125 Creekside Dr Rochester NY 14622 Meta_vega@yahoo.com 1-585-978-8290
Product Information	:	1-844-773-CHEM (outside the U.S. 1-302-773-1000)
Medical Emergency	:	1-866-595-1473 (outside the U.S. 1-302-773-2000)
Transport Emergency	:	CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Product hazard category

Flammable gases	Category 1
Gases under pressure	Liquefied gas

PURE322

Version 1.0

Revision Date 05/15/2018

Label content

Pictogram :

Signal word : Danger

Hazardous warnings : Extremely flammable gas.
Contains gas under pressure; may explode if heated.

Hazardous prevention measures : Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
Eliminate all ignition sources if safe to do so.
Protect from sunlight. Store in a well-ventilated place.

Other hazards

Rapid evaporation of the liquid may cause frostbite., Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing., May cause cardiac arrhythmia.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Dimethyl ether	115-10-6	100 %

SECTION 4. FIRST AID MEASURES

General advice	:	Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.
Inhalation	:	If inhaled Immediately move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Skin contact	:	Flush skin with water after excessive contact. Treat for frostbite if necessary by gently warming affected area.
Eye contact	:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Consult a physician if necessary.
Ingestion	:	Is not considered a potential route of exposure.
Most important symptoms/effects, acute and delayed	:	No applicable data available.
Protection of first-aiders	:	If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Notes to physician	:	Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Water spray, Foam, Dry chemical, Carbon dioxide (CO2)
Unsuitable extinguishing media	:	No applicable data available.

Specific hazards	:	Vapours may form explosive mixtures with air. Vapours are heavier than air and may spread along floors. Vapours or gases may travel considerable distances to ignition source and flash back. Hazardous thermal decomposition products: Carbon oxides
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.
Further information	:	Fire and Explosion Hazards: Extremely flammable. Vapors are heavier than air and may travel to source of ignition and flash back. Avoid high temperature and static charges. Cylinders are equipped with pressure and temperature relief devices, but may still rupture under fire conditions. Explosion is possible. Use water spray to cool unopened containers. Stop flow of gas. Do not put out the fire unless leak can be stopped immediately. Use water spray or fog to protect the fire fighters and to cool container.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel)	:	Review sections 5 and 7 of the SDS before proceeding with clean-up. Use personal protective equipment. Close DME (Dimethyl Ether) source valves and guard against sparks or ignition sources. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ventilate area, especially low or enclosed places where heavy vapours might collect. Comply with Federal, State and Local regulations on reporting releases
Environmental precautions	:	Should not be released into the environment.
Spill Cleanup	:	Evaporates.
Accidental Release Measures	:	Wear self-contained breathing apparatus (SCBA).

SECTION 7. HANDLING AND STORAGE

Handling (Personnel)	:	Avoid breathing vapours or mist. Avoid contact with skin, eyes and clothing. Provide sufficient air exchange and/or exhaust in work rooms. For personal protection see section 8.
Handling (Physical Aspects)	:	Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. No sparking tools should be used. Take measures to prevent the build up of electrostatic charge. Keep away from heat and sources of ignition. Keep away from open flames, hot surfaces and sources of ignition. When using do not smoke.
Dust explosion class	:	Not applicable
Storage	:	Do not drag, slide or roll cylinders. Never attempt to lift cylinder by its cap. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. Keep containers tightly closed in a cool, well-ventilated place. Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C. Do not pierce or burn, even after use. Store in original container. Protect from contamination. Keep away from: Combustible material Oxidizing agents
Storage period	:	No applicable data available.
Storage temperature	:	< 50 °C (< 122 °F)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls	:	Normal ventilation for standard manufacturing procedures is generally adequate. Use local exhaust when large amounts are released or when exposure or flammable limits in air might be exceeded. Mechanical ventilation should be used in low or enclosed places. Ground all equipment and cylinders before use. Use explosion-proof electrical equipment rated Class I, Group C of the National Electrical Code in Division I locations. In Division 2 locations, all spark-producing electrical equipment must be explosion-proof

and rated Class I, Group C.
Non-sparking motors need not be explosion-proof. Equipment should be clean and dry and purged with nitrogen before being put into service.

Personal protective equipment

Respiratory protection	:	Under normal manufacturing conditions, no respiratory protection is required when using this product.
Hand protection	:	Additional protection: Impervious gloves
Eye protection	:	Safety glasses with side-shields Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.
Skin and body protection	:	Fire protective clothing (NOMEX) with antistatic control should be worn when handling this product. Wear protective clothing which covers any other exposed areas of the arms, legs, and torso.

Exposure Guidelines

Exposure Limit Values

Dimethyl ether

No applicable data available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	:	gaseous
Form	:	Liquefied gas
Color	:	colourless
Odor	:	slight, ether-like
Odor threshold	:	No applicable data available.

PURE322

Version 1.0

Revision Date 05/15/2018

pH	:	Not applicable
Melting point/freezing point	:	Melting point -141.5 °C (-222.7 °F) at 1,013 hPa
Boiling point/boiling range	:	Boiling point -24.8 °C (-12.6 °F) at 1,013 hPa
Flash point	:	-41 °C Method: Tag open cup - TOC
Evaporation rate	:	No applicable data available.
Flammability (solid, gas)	:	No applicable data available.
Upper explosion limit	:	18.0 vol%
Lower explosion limit	:	3.4 vol%
Vapor pressure	: :	5,915.7 hPa at 25 °C (77 °F) 11,486.7 hPa at 50 °C (122 °F)
Vapor density	:	1.6 (Air = 1.0)
Density	:	0.667 g/cm3 at 20 °C (68 °F) (as liquid)
Specific gravity (Relative density)	:	No applicable data available.
Water solubility	:	350 g/l at 25 °C (77 °F) at 4,450 hPa
Solubility(ies)	:	No applicable data available.
Partition coefficient: n-octanol/water	:	Pow: 0.07 at 25 °C (77 °F)
Auto-ignition temperature	:	No applicable data available.

Decomposition temperature	:	No applicable data available.
Viscosity, kinematic	:	no data available
Viscosity, dynamic	:	no data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No applicable data available.
Chemical stability	:	The product is chemically stable.
Possibility of hazardous reactions	:	Polymerization will not occur.
Conditions to avoid	:	Temperature > 50 °C (> 122 °F) Heat, flames and sparks.
Incompatible materials	:	Incompatible products Oxygen, oxidizers, Carbon monoxide, Acetic acid, organic, Acid anhydrides
Hazardous decomposition products	:	If heated with peroxides present, violent decomposition can occur.

SECTION 11. TOXICOLOGICAL INFORMATION

Dimethyl ether

Inhalation 4 h LC50	:	164000 ppm , Rat Respiratory effects Anaesthetic effects Central nervous system depression narcosis Cardiac irregularities Coma
Inhalation	:	Dog Cardiac sensitization
Dermal	:	Not applicable

Oral	:	Not applicable
Skin irritation	:	No skin irritation, Not tested on animals Not expected to cause skin irritation based on expert review of the properties of the substance.
Eye irritation	:	No eye irritation, Not tested on animals Not expected to cause eye irritation based on expert review of the properties of the substance.
Skin sensitization	:	Not tested on animals Not expected to cause sensitization based on expert review of the properties of the substance. There are no reports of human skin sensitization. There are no reports of human respiratory sensitization.
Repeated dose toxicity	:	Inhalation Rat - No toxicologically significant effects were found.
Carcinogenicity	:	Not classifiable as a human carcinogen.
Mutagenicity	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Reproductive toxicity	:	No toxicity to reproduction Evidence suggests the substance is not a reproductive toxin in animals.
Teratogenicity	:	Animal testing showed no developmental toxicity.
Further information	:	Cardiac sensitisation threshold limit : 376850 mg/m3

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according

to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity

Dimethyl ether

96 h LC50	:	Poecilia reticulata (guppy) > 4,000 mg/l
96 h EC50	:	Pseudokirchneriella subcapitata (green algae) 154.917 mg/l
48 h EC50	:	Daphnia (water flea) > 4,000 mg/l
48 h LC50	:	Daphnia (water flea) 755.549 mg/l
	:	Due to its physical properties, there is no potential for adverse effects.

Environmental Fate

Dimethyl ether

Biodegradability	:	Product is not expected to be biodegradable.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product	:	Contaminated DME (Dimethyl Ether) may be incinerated or removed to a permitted waste disposal facility. Comply with applicable Federal, State/Provincial and Local Regulations. May be a RCRA Hazardous waste due to the ignitability characteristic.
Contaminated packaging	:	No applicable data available.

PURE322

Version 1.0

Revision Date 05/15/2018

SECTION 14. TRANSPORT INFORMATION

DOT	UN number	: N/A
	Proper shipping name	: LIMITED QUANTITY
	Class	: ORM-D
	Labeling No.	: N/A
IATA_C	UN number	: UN1950
	Proper shipping name	: LIMITED QUANTITY
	Class	: 2.1
IMDG	UN number	: UN1950
	Proper shipping name	: LIMITED QUANTITY
	Class	: N/A
	Label	:

SECTION 15. REGULATORY INFORMATION

TSCA	:	Listed
SARA 313 Regulated Chemical(s)	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
PA Right to Know Regulated Chemical(s)	:	Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Dimethyl ether
NJ Right to Know Regulated Chemical(s)	:	Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Dimethyl ether

PURE322

Version 1.0

Revision Date 05/15/2018

California Prop. 65	:	Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known

SECTION 16. OTHER INFORMATION

Before use read all safety information. For further information contact us at:
Email: contactus@pure322.com
Phone: 585-978-7290
Mail: 125 Creekside Drive Rochester NY, 14622

Revision Date : 05/15/2018

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.

Significant change from previous version is denoted with a double bar.