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SAFETY DATA SHEET

Revision Number
1.1

1. IDENTIFICATION

Product identifier

Product code
Product name
Product category

**SAPPHIRE-MTFL
Maintenance Fluid (Cleaning Solution)
Sapphire Series**

Other means of identification

Synonyms
None

Recommended use of the chemical and restrictions on use

Recommended use
Industrial Printing Operations

Details of the supplier of the safety data sheet

M&R Printing Equipment, Inc.
440 Medinah Rd.
Roselle, IL 60172-2329
(800) 736-6431

Emergency telephone number(s)

For Hazardous Materials [or Dangerous Goods] Incident Spill, Leak, Fire, Exposure, or Accident, call Chemtrec -
Within US and Canada: (800) 424-9300 / Outside US and Canada: +1 (703) 741-5970

2. HAZARDS IDENTIFICATION

Classification

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Signal Word

None

Hazards not otherwise classified (HNOC)

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Component	CAS-No	Weight %	Trade Secret	Note
Deionized water	7732-18-5	60 - 80	*	
Diethylene glycol	111-46-6	10 - 30	*	
Diethylene glycol monobutyl ether	112-34-5	5 - 10	*	
Triethanolamine	102-71-6	0.1 - < 1	*	

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

Description of first aid measures

General Advice	Show this safety data sheet to the doctor in attendance.
Eye Contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention if irritation develops and persists.
Skin Contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. If irritation (redness, rash, blistering) develops, get medical attention.
Inhalation	Remove person to fresh air and keep comfortable for breathing. If breathing is irregular or stopped, administer artificial respiration. Get medical attention immediately.
Ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

Most important symptoms and effects, both acute and delayed

None under normal use conditions.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Foam. Carbon dioxide (CO₂). Dry chemical. Water spray. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

No information available.

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors. May emit toxic fumes under fire conditions.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Cool containers / tanks with water spray. Sealed containers may rupture when heated.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Personal Precautions Remove all sources of ignition. Ventilate the area. Avoid contact with eyes, skin and clothing. Avoid breathing dust or vapor. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions

Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. Keep out of drains, sewers, ditches and waterways. Local authorities should be advised if significant spillages cannot be contained.

Methods and material for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Use clean non-sparking tools to collect absorbed material.

7. HANDLING AND STORAGE**Precautions for safe handling**

Handling Use personal protective equipment as required. Do not eat, drink or smoke when using this

product. Ensure adequate ventilation.

Conditions for safe storage, including any incompatibilities

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep container closed when not in use. Keep out of the reach of children. Do not freeze.

Incompatible Products Strong acids. Strong bases. Strong oxidizing agents. Reducing agent.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits

Component	ACGIH TLV
Diethylene glycol monobutyl ether 112-34-5	TWA: 10 ppm inhalable fraction and vapor
Triethanolamine 102-71-6	TWA: 5 mg/m ³

Component	Ontario TWAEV
Diethylene glycol monobutyl ether 112-34-5	TWA: 10 ppm inhalable fraction and vapor
Triethanolamine 102-71-6	TWA: 0.5 ppm TWA: 3.1 mg/m ³

Component	Mexico OEL (TWA)
Triethanolamine 102-71-6	TWA/VLE-PPT: 5 mg/m ³

Appropriate engineering controls

Engineering Measures Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Users are advised to consider national Occupational Exposure Limits or other equivalent values. In case of insufficient ventilation, wear suitable respiratory equipment.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Wear safety glasses with side shields (or goggles). If splashes are likely to occur. Wear suitable face shield. Ensure that eyewash stations and safety showers are close to the workstation location.

Skin Protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Hand Protection Chemical resistant protective gloves.
Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding >480 minutes of permeation time): eg. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) and other
Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers. Taking into account the varying conditions, the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.
Due to different glove types, the manufacturer's directions for use should be observed. Replace gloves immediately when torn or any change in appearance is noticed such as

dimension, color, flexibility.

Respiratory Protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice. Wash hands before eating, drinking or smoking. Wash contaminated clothing before reuse. Avoid contact with eyes, skin and clothing. Wear suitable gloves and eye/face protection. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid	Color	Colored
Odor	No information available	Odor Threshold	No information available

Property	Values	Remarks • Method
pH		No data available
Melting Point / Freezing Point		No data available
Boiling Point / Boiling Range	> 100 °C / 212 °F	
Flash Point	> 94 °C / > 201 °F	No data available
Evaporation rate		No data available
Flammability Limit in Air		
Upper flammability limit		No data available
Lower flammability limit		No data available
Vapor Pressure		No data available
Vapor Density		No data available
Specific Gravity	1.02	
Water Solubility		No data available
Solubility in other solvents		No data available
Partition coefficient: n-octanol/water		No data available
Autoignition Temperature		No data available
Decomposition temperature		No data available
Kinematic viscosity		No data available
Dynamic viscosity		No data available

Explosive Properties	No data available
Oxidizing Properties	No data available

Other Information

Photochemically Reactive	No
Weight Per Gallon (lbs/gal)	8.5

VOC by weight % (less water) 100	VOC by volume % (less water) No information available	VOC lbs/gal (less water) 8.65	VOC grams/liter (less water) 1036.89
Volatile by weight % (including Water) 100	Water by weight % 73.91		

10. STABILITY AND REACTIVITY

Reactivity

No information available.

Chemical stability

Stable under normal conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Do not freeze.

Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents. Reducing agent.

Hazardous Decomposition ProductsThermal decomposition can lead to release of irritating gases and vapors. Carbon dioxide (CO₂). Carbon monoxide.**11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure****Inhalation**

Specific test data for the substance or mixture is not available.

Eye Contact

Specific test data for the substance or mixture is not available.

Skin Contact

Specific test data for the substance or mixture is not available.

Ingestion

Specific test data for the substance or mixture is not available.

Component	Oral LD50
Deionized water 7732-18-5	> 90 mL/kg (Rat)
Diethylene glycol 111-46-6	= 12565 mg/kg (Rat)
Diethylene glycol monobutyl ether 112-34-5	= 5660 mg/kg (Rat)
Triethanolamine 102-71-6	= 4190 mg/kg (Rat)

Component	Dermal LD50
Diethylene glycol 111-46-6	= 11890 mg/kg (Rabbit)
Diethylene glycol monobutyl ether 112-34-5	= 2700 mg/kg (Rabbit)
Triethanolamine 102-71-6	> 20000 mg/kg (Rabbit)

Component	Inhalation LC50
Diethylene glycol 111-46-6	> 4600 mg/m ³ (Rat) 4 h

Information on toxicological effects**Symptoms**

Specific test data for the substance or mixture is not available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure**Skin corrosion/irritation**

Specific test data for the substance or mixture is not available.

Eye damage/irritation

Specific test data for the substance or mixture is not available.

Irritation

Specific test data for the substance or mixture is not available.

Corrosivity

Specific test data for the substance or mixture is not available.

Sensitization

Specific test data for the substance or mixture is not available.

Mutagenic Effects

Specific test data for the substance or mixture is not available.

Carcinogenic effects

Specific test data for the substance or mixture is not available.

Reproductive Effects
 STOT - single exposure
 STOT - repeated exposure
 Chronic Toxicity
 Aspiration hazard
 Carcinogenicity

Specific test data for the substance or mixture is not available.
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 Specific test data for the substance or mixture is not available.
 This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity 0 % of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 2,500.00

12. ECOLOGICAL INFORMATION

Ecotoxicity

Specific test data for the substance or mixture is not available.

0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Component	Algae/aquatic plants
Diethylene glycol monobutyl ether 112-34-5	96h EC50 Desmodesmus subspicatus: > 100 mg/L
Triethanolamine 102-71-6	96h EC50 Desmodesmus subspicatus: = 169 mg/L 72h EC50 Desmodesmus subspicatus: = 216 mg/L

Component	Fish
Diethylene glycol 111-46-6	96h LC50 Pimephales promelas: = 75200 mg/L (flow-through)
Diethylene glycol monobutyl ether 112-34-5	96h LC50 Lepomis macrochirus: = 1300 mg/L (static)
Triethanolamine 102-71-6	96h LC50 Lepomis macrochirus: 450 - 1000 mg/L (static) 96h LC50 Pimephales promelas: 10600 - 13000 mg/L (flow-through) 96h LC50 Pimephales promelas: > 1000 mg/L (static)

Component	Crustacea
Diethylene glycol 111-46-6	48h EC50 Daphnia magna: = 84000 mg/L
Diethylene glycol monobutyl ether 112-34-5	48h EC50 Daphnia magna: > 100 mg/L

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Component	Partition coefficient
Diethylene glycol 111-46-6	-1.98
Triethanolamine 102-71-6	-2.53

13. DISPOSAL CONSIDERATIONS**Waste treatment methods****Waste Disposal Methods**

Contain and dispose of waste according to local regulations.

Contaminated Packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION**Note:**

This information is not intended to convey all specific transportation requirements relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation information can be found in the specific regulations for your mode of transportation. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

DOT

Not regulated

ICAO / IATA / IMDG / IMO

Not Regulated

15. REGULATORY INFORMATION**International Inventories**

All components are listed on the TSCA Inventory. For further information, please contact: Supplier (manufacturer/importer/downstream user/distributor).

U.S. Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Component	CAS-No	Weight %	SARA 313 - Threshold Values
Diethylene glycol monobutyl ether	112-34-5	5 - 10	1.0

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product contains the following substances which are listed hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act:.

Component	CAS-No	Weight %
Diethylene glycol monobutyl ether	112-34-5	5 - 10

U.S. State Regulations

Component	Massachusetts Right To Know
Triethanolamine 102-71-6	X

Component	Minnesota Right To Know
Diethylene glycol 111-46-6	X
Triethanolamine 102-71-6	X

Component	New Jersey Right To Know
Diethylene glycol monobutyl ether 112-34-5	X
Triethanolamine 102-71-6	X

Component	Pennsylvania Right To Know
Deionized water 7732-18-5	X
Diethylene glycol 111-46-6	X
Diethylene glycol monobutyl ether 112-34-5	X
Triethanolamine 102-71-6	X

California Proposition 65

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects

Canada

Component	NPRI - National Pollutant Release Inventory
Diethylene glycol 111-46-6	Part 4 Substance (as set out in Section 65 of the List of Toxic Substances in Schedule 1 of the Canadian Environmental Protection Act, 1999)
Diethylene glycol monobutyl ether 112-34-5	Part 5, Other Groups and Mixtures (total of CAS 112-07-2, CAS 112-15-2, CAS 112-25-4, CAS 112-34-5, CAS 5131-66-8, CAS 107-98-2, CAS 109-59-1, CAS 111-90-0, CAS 124-17-4, CAS 1569-01-3, CAS 1569-02-4, CAS 2807-30-9, CAS 29911-27-1, CAS 29911-28-2, CAS 34590-94-8, CAS 54839-24-6, CAS 623-84-7, CAS 88917-22-0 and their isomers, listed under Other Glycol ethers and acetates (and their isomers)) Part 4 Substance (as set out in Section 65 of the List of Toxic Substances in Schedule 1 of the Canadian Environmental Protection Act, 1999)
Triethanolamine 102-71-6	Part 4 Substance (as set out in Section 65 of the List of Toxic Substances in Schedule 1 of the Canadian Environmental Protection Act, 1999)

16. OTHER INFORMATION

HMIS:	Health	Flammability	Reactivity	Personal Protection
	2	1	0	X

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)
STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value

ACGIH: (American Conference of Governmental Industrial Hygienists)

- A1 - Known Human Carcinogen
- A2 - Suspected Human Carcinogen
- A3 - Animal Carcinogen

IARC: (International Agency for Research on Cancer)

- Group 1 - Carcinogenic to Humans
- Group 2A - Probably Carcinogenic to Humans
- Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

Known - Known Carcinogen

Reasonably Anticipated to be a Human Carcinogen

OSHA: (Occupational Safety & Health Administration)

X - Present

Revision Date

Nov-18-2021

Pursuant to NOM-018-STPS-2015

This information within is considered correct but is not exhaustive and will be used for guidance only, which is based on the current knowledge of the substance or mixture and is applicable to the appropriate safety precautions for the product.

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