SAFETY DATA SHEET

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Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product code **STAR-720-70-1L**

Product name **STAR UV Head Maintenance Fluid**

Product category **High Build Inkjet Inks**

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use Industrial Printing Operations

1.3 Details of the supplier of the safety data sheet

Ultimate Solutions Ltd
24 Donnington Road
Burton Latimer
Kettering NN15 5WL
Tel: 07970357338

For further information, please contact

Contact person

E-mail address

1.4 Emergency telephone number

Section 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

According to Regulation (EC) No 1272/2008

Serious eye damage/eye irritation	Category 2 - (H319)

2.2 Label elements

Signal Word
Warning

Hazard Statements
H319 - Causes serious eye irritation

Precautionary Statements

P264 - Wash face, hands and any exposed skin thoroughly after handling
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
P280 - Wear protective gloves/protective clothing/eye protection/face protection

2.3 Other Hazards

General Hazards No information available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Component	EC No	CAS-No	Weight %	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH No.	Note
Diethylene glycol monobutyl ether	203-961-6	112-34-5	80 - 100	Eye Irrit. 2 (H319)	01-2119475104-44-xxxx	1

Note
REACH No: Registration number(s) may not be provided because substance(s) are exempted or not yet required to be registered under REACH
1. Substance with a Community workplace exposure limit

Full text of H- and EUH-phrases: see section 16

Section 4: FIRST AID MEASURES

4.1 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. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

None under normal use conditions.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1 Extinguishing media

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.

5.2 Special hazards arising from the substance or mixture

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

5.3 Advice 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.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

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.

6.2 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.

6.3 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.

6.4 Reference to other sections

See Section 12 for more information.

Section 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Use personal protective equipment as required. Do not eat, drink or smoke when using this product. Ensure adequate ventilation.

7.2 Conditions for safe storage, including any incompatibilities

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.

7.3 Specific end use(s)

Exposure scenario No information available.

Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure limits

Component	**European Union**
Diethylene glycol monobutyl ether 112-34-5	TWA: 10 ppm TWA: 67.5 mg/m^3 STEL: 15 ppm STEL: 101.2 mg/m^3
Component	**The United Kingdom**
Diethylene glycol monobutyl ether 112-34-5	STEL: 15 ppm STEL: 101.2 mg/m^3 TWA: 10 ppm TWA: 67.5 mg/m^3
Component	**France**
Diethylene glycol monobutyl ether 112-34-5	TWA/VME: 10 ppm indicative limit TWA/VME: 68 mg/m^3 indicative limit STEL/VLCT: 15 ppm indicative limit

	STEL/VLCT: 101.2 mg/m^3 indicative limit
Component	**Germany**
Diethylene glycol monobutyl ether 112-34-5	TWA/MAK: 67 mg/m^3 TWA/MAK: 10 ppm TWA/AGW: 10 ppm TWA/AGW: 67 mg/m^3 Peak: 15 ppm Peak: 100.5 mg/m^3
Component	**Spain**
Diethylene glycol monobutyl ether 112-34-5	TWA/VLA-ED: 10 ppm TWA/VLA-ED: 67.5 mg/m^3 STEL/VLA-EC: 15 ppm STEL/VLA-EC: 101.2 mg/m^3
Component	**Italy**
Diethylene glycol monobutyl ether 112-34-5	TWA: 10 ppm TWA: 67.5 mg/m^3 STEL: 15 ppm STEL: 101.2 mg/m^3
Component	**Portugal**
Diethylene glycol monobutyl ether 112-34-5	TWA/VLE-MP: 10 ppm TWA/VLE-MP: 67.5 mg/m^3 STEL/VLE-CD: 101.2 mg/m^3 STEL/VLE-CD: 15 ppm
Component	**The Netherlands**
Diethylene glycol monobutyl ether 112-34-5	TWA: 50 mg/m^3 STEL: 100 mg/m^3 Skin
Component	**Finland**
Diethylene glycol monobutyl ether 112-34-5	TWA: 10 ppm TWA: 68 mg/m^3
Component	**Denmark**
Diethylene glycol monobutyl ether 112-34-5	TWA: 10 ppm TWA: 68 mg/m^3
Component	**Austria**
Diethylene glycol monobutyl ether 112-34-5	STEL/KZW: 15 ppm STEL/KZW: 101.2 mg/m^3 TWA/TMW: 10 ppm TWA/TMW: 67.5 mg/m^3
Component	**Switzerland**
Diethylene glycol monobutyl ether 112-34-5	TWA/MAK: 10 ppm aerosol, vapour TWA/MAK: 67 mg/m^3 aerosol, vapour STEL/KZW: 15 ppm aerosol, vapour STEL/KZW: 101 mg/m^3 aerosol, vapour
Component	**Poland**
Diethylene glycol monobutyl ether 112-34-5	TWA/NDS: 67 mg/m^3 STEL/NDSCh : 100 mg/m^3
Component	**Norway**
Diethylene glycol monobutyl ether 112-34-5	TWA: 10 ppm TWA: 68 mg/m^3
Component	**Ireland**
Diethylene glycol monobutyl ether 112-34-5	TWA: 10 ppm TWA: 67.5 mg/m^3 STEL: 15 ppm STEL: 101.2 mg/m^3

Derived No Effect Level (DNEL) .

Component	**DNEL - Dermal (Workers)**	**DNEL - Inhalation (Workers)**
Diethylene glycol monobutyl ether 112-34-5	83 mg/kg (Systemic long term)	67.5 mg/m^3 (Systemic long term) 67.5 mg/m^3 (Local long term) 101.2 mg/m^3

		(Local acute/short term)

Predicted No Effect Concentration (PNEC) No information available.

8.2 Exposure 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.

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.

Eye Protection Safety glasses with side-shields. Goggles. Face-shield. Avoid contact with eyes. 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.

Environmental exposure controls No information available.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical State Liquid
Color Water-white
Odor No information available

Property	Values	Remarks • Method
Melting Point / Freezing Point		No data available
Boiling Point / Boiling Range	> 149 °C / 300 °F	
Flammability Limit in Air		
Upper flammability limit		No data available

Lower flammability limit		No data available
Flash Point	100 °C / 212 °F	
Autoignition Temperature		No data available
Decomposition temperature		No data available
pH		No data available
Kinematic viscosity		No data available
Water Solubility		No data available
Solubility in other solvents		No data available
Partition coefficient: n-octanol/water		No data available
Vapor Pressure		No data available
Specific Gravity	0.95	
Vapor Density		No data available

9.2 Other information

Explosive Properties	No data available
Oxidizing Properties	No data available

Section 10: STABILITY AND REACTIVITY

10.1 Reactivity

No information available.

10.2 Chemical Stability

Stable under normal conditions.

10.3 Possibility of Hazardous Reactions

None under normal processing.

10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition.

10.5 Incompatible materials

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

10.6 Hazardous decomposition products

Thermal decomposition can lead to release of irritating gases and vapors. Carbon dioxide (CO2). Carbon monoxide.

Section 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Toxicity

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.

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

Unknown Acute Toxicity

0 % of the mixture consists of ingredient(s) of unknown toxicity.

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.

0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

Component	Oral LD50
Diethylene glycol monobutyl ether 112-34-5	= 5660 mg/kg (Rat)

Component	Dermal LD50
Diethylene glycol monobutyl ether 112-34-5	= 2700 mg/kg (Rabbit)

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. Causes serious eye irritation. (based on components).
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 Specific test data for the substance or mixture is not available.

STOT - single exposure Specific test data for the substance or mixture is not available.
STOT - repeated exposure Specific test data for the substance or mixture is not available.
Aspiration hazard Specific test data for the substance or mixture is not available.

11.2 Information on other hazards
No information available

Section 12: ECOLOGICAL INFORMATION

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

Unknown Aquatic Toxicity
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

Component	Fish
Diethylene glycol monobutyl ether 112-34-5	96h LC50 Lepomis macrochirus: = 1300 mg/L (static)

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

12.2 Persistence and degradability
No information available.

12.3 Bioaccumulative potential
No information available

12.4 Mobility in soil
No information available.

12.5 Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

12.6 Endocrine disrupting properties.

This product does not contain any known or suspected endocrine disruptors.

12.7 Other adverse effects

No information available.

Section 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste from residues/unused products	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.

Section 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.

ADR Not Regulated

ICAO / IATA / IMDG / IMO Not Regulated

Section 15: REGULATORY INFORMATION

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

European Union

International Inventories

For further information, please contact: Supplier (manufacturer/importer/downstream user/distributor)

Regulation (EC) No. 1907/2006 (REACH), Article 57

This product does not contain candidate substances of very high concern at a concentration >=0.1% (Regulation (EC) No. 1907/2006 (REACH), Article 59).

15.2 Chemical Safety Assessment

No information available.

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
H319 - Causes serious eye irritation

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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

Revision Date Nov-02-2021

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

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