QED Bioscience Inc.
Surf's Up® Surfactant Kit
Surfactant No. 5 BRIJ® 98

NOTE: Chemicals in the Surf's Up® Surfactant Kit are provided as 10% solutions. The following information pertains to the chemicals in an undissolved/undiluted state.

1. PRODUCT

Product Name **BRIJ® 98**

2. COMPOSITION

Synonyms	Polyoxyethylene (20) oleyl ether
Formula	$C_{58}H_{116}O_{21}$
Molecular Weight	1,149.53g/mol

	CAS Number
Poly(oxy-1,2-ethanediyl), alpha-(9z)-9-octadecen-1-yl-omega-hydroxy	9004-98-2

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards Irritant

GHS Classification

Acute toxicity, oral (Category 5)
Skin irritation (Category 2)
Serious eye damage (Category 1)

HAZARD RATINGS	HMIS	NFPA
Health	2	2
Flammability	1	1
Reactivity	0	0

Potential Health Effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.
Skin May be harmful if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.
Ingestion May be harmful if swallowed.

4. FIRST AID MEASURES

Eyes Immediately flush eyes with water for at least 15 minutes while holding eyelids open. If irritation persists, seek medical attention.
Skin Immediately flush skin with large amounts of soap and water. If irritation persists, seek medical attention.
Inhalation Move victim to fresh air. If not breathing, give artificial respiration. Seek medical attention if necessary.
Ingestion Never give anything by mouth to an unconscious person. Rinse mouth with water. Seek medical attention if necessary.

5. FIRE FIGHTING MEASURES

Conditions of flammability Not flammable or combustible.
Extinguishing Media Water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Fire Fighting Equipment/Instructions Wear self-contained breathing apparatus and protective clothing if necessary.

Hazardous combustion products Hazardous decomposition products formed under fire conditions – carbon oxides.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

Do not let product enter drains.

Clean-up methods

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling Procedures Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

Storage Procedures Store in tightly sealed containers in a dry and well-ventilated area. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

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).

Hand 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.

Eye protection

Tightly fitting safety glasses. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin and body protection

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Color	yellow

Safety data

pH	No data available
Melting point	25-30^{o}C (77-86^{o}F)
Boiling point	>100^{o}C (>212^{o}F)
Flash point	>149^{o}C (>300^{o}F) – open cup
Ignition temperature	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Density	1.000g/cm^{3} at 25^{o}C (77^{o}F)
Water solubility	Soluble
Partition coefficient n-octanol/water	No data available
Relative vapor density	No data available
Odor	No data available
Odor threshold	No data available
Evaporation rate	No data available

10. STABILITY AND REACTIVITY

Storage stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
No data available

Conditions to avoid
No data available

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions – carbon oxides.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral – rat – 2,760mg/kg

Inhalation LC50
No data available

Dermal LD50
No data available

Skin corrosion/irritation
Skin – rabbit – skin irritation – 24h

Serious eye damage/eye irritation
Eyes – rabbit – risk of serious damage to eyes

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
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

Teratogenicity
No data available

Specific target organ toxicity – single exposure (Globally Harmonized System)
No data available

Specific target organ toxicity – repeated exposure (Globally Harmonized System)
No data available

Aspiration hazard
No data available

Potential health effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.
Ingestion	May be harmful if swallowed.

Signs and symptoms of exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Prolonged or repeated exposure can cause nausea, headache, vomiting.

Synergistic effects
No data available

Additional information
RTECS: RK2800000

12. ECOLOGICAL INFORMATION

Persistence and degradability

Expected to be biodegradable

Ecotoxicity
No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

PBT and vPvB assessment
No data available

Other adverse effects
No data available

13. DISPOSAL CONSIDERATIONS

Product	Contact a licensed professional waste disposal service to dispose of this material.
Contaminated packaging	Dispose of as unused product.

14. TRANSPORT INFORMATION

Dot ((US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards
Irritant

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers tht exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute health hazard

Massachusetts Right to Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right to Know Components

Poly(oxy-1,2-ethanediyl), alpha-(9z)-9-octadecen-1-yl-omega-hydroxy-	CAS No. 9004-98-2

New Jersey Right to Know Components

Poly(oxy-1,2-ethanediyl), alpha-(9z)-9-octadecen-1-yl-omega-hydroxy-	CAS No. 9004-98-2

California Prop. 65 Components

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

16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. QED Bioscience Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.