SAFETY DATA SHEET

Excalibur

1. Identification

Trade Name: Excalibur
Family: Foam Marking Agent
Formula: Proprietary blend of Alkyl and Alkyl Ether Sulfates, Hydroxyalkylamides, Alkyl Hydroxides, Alkoxyalcohol and Succinic Acid Derivatives.
Manufacturer: Rosens's Inc; 700 SW 291 Hwy, Ste. 204, Liberty, MO 64068.
Phone: 877-781-9191
For Chemical Emergencies call Chemtrec at 800-424-9300
For Other Emergencies call 911 and/or Appropriate Regulatory Agencies

2. Hazard Identification

HCS 2012 (29 CFR 1910.1200)

Although OSHA has not adopted the environmental portion of the GHS regulations, this document may include information on environmental effects.

Classification of the substance or mixture
HCS 2012 (29 CFR 1910.1200)

Flammable liquids, Category 4	: Combustible liquid.
Skin irritation, Category 2	: Causes skin irritation.
Serious eye damage, Category 1	: Causes serious eye damage.

Label elements

HCS 2012 (29 CFR 1910.1200)

Pictogram :

Signal Word: Danger

Hazard Statements:
Combustible liquid.
Causes skin irritation.
Causes serious eye damage

Precautionary Statements:

Prevention
Keep away from heat/sparks/open flames/hot surfaces.
Wash thoroughly after handling.
Do not handle until all safety precautions have been read and understood.
Wear eye protection/ face protection.
Use personal protective equipment as required.

Response
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.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation occurs: Get medical advice/ attention.
Take off contaminated clothing and wash before reuse.
In case of fire: use dry sand, dry chemical or alcohol resistant foam for extinction.

Storage
Store in a well ventilated place. Keep cool.

Disposal
Dispose of contents/container in accordance with all applicable regulations.

Other hazards which do not result in classification
Toxic to aquatic life.
Harmful to aquatic life with long lasting effects.

3. Composition/Information on Ingredients

Mixture

Synonyms : Proprietary foam marker agent.

Hazardous Ingredients and Impurities

Chemical Name	Identification Number CAS-No.	Concentration (%)
Ethylene Glycol Monobutyl Ether	111-76-2	12.5
Proprietary surfactant blend	Trade secret	83.5
Ethanol	64-17-5	2.75
Polyethylene Glycol	25322-68-3	1.5

*The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

4. First Aid Measures

Description of first-aid measures
General advice: First responder needs to protect himself.
Place affected apparel in a sealed bag for subsequent decontamination.

If inhaled: Negligible or unlikely exposure pathways.
Remove to fresh air.
Consult a physician if necessary.

Skin contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Seek medical advice.
Wash contaminated clothing before re-use.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Seek medical advice.

Ingestion: Do not induce vomiting without medical advice.
If victim is conscious:
Rinse mouth with water.
Do not give anything to drink.
Keep at rest.
Do not leave the victim unattended.
Vomiting may occur spontaneously
Risk of product entering the lungs on vomiting after ingestion.
Lay victim on side.
Seek medical advice.

Most important symptoms and effects, both acute and delayed
Risks: Skin contact may aggravate existing skin disease
Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis.

Indication of any immediate medical attention and special treatment needed
Notes to physician: All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.
Treat symptomatically.
There is no specific antidote available.

5. Fire-fighting Measures

Flash point: >156 °F (69 °C)
closed cup
Flammability class: Combustible
Autoignition temperature: no data available
Flammability / Explosive limit: Lower flammability/explosion limit : 1.10 %(V)
Upper flammability/explosion limit: 19.00 %(V)

Extinguishing media
Suitable extinguishing media: Extinguishing media - small fires
Dry chemical
Carbon dioxide (CO2)
Extinguishing media - large fires
Foam
Water spray
Unsuitable extinguishing media: High volume water jet
(frothing possible)

Special hazards arising from the substance or mixture
Specific hazards during fire fighting: Under fire conditions:
Will burn
(following evaporation of water)
Vapors may spread long distances and ignite.
Hazardous decomposition products formed under fire conditions.
Carbon oxides
Sulfur oxides
Nitrogen oxides (NOx)

Advice for firefighters
Special protective equipment for fire-fighters: Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures
Use personal protective equipment.
For further information refer to section 8 "Exposure controls / personal protection."

Environmental precautions
Do not flush into surface water or sanitary sewer system.
Take all necessary measures to avoid accidental discharge of products into drains and waterways

due to the rupture of containers or transfer systems.
Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies

Methods and materials for containment and cleaning up

Prohibition: Use only non-sparking tools.

Methods for containment: Stop leak if safe to do so. Dam up with sand or inert earth (do not use combustible materials).

Recovery: Soak up with inert absorbent material. Shovel or sweep up.Keep in suitable, closed containers for disposal. Never return spills in original containers for re-use.

Decontamination / cleaning: Clean contaminated surface thoroughly. Flush with plenty of water. Recover the cleaning water for subsequent disposal. Decontaminate tools, equipment and personal protective equipment in a segregated area.

Disposal: Dispose of in accordance with all applicable regulations.

7. Handling and Storage Information

Handling: This product must only be handled by specifically trained employees. Do not use sparking tools. Avoid contact with skin and eyes. Do not ingest. Avoid inhalation of vapor or mist. Ensure all equipment is electrically grounded before beginning transfer operations. Wash hands after handling, and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Storage: Store in original container. Keep containers tightly closed in a dry and well ventilated place. Store locked up. Do not allow product to freeze. Keep away from heat/sparks/open flames/hot surfaces and sources of ignition. Do not mix with incompatible materials. Store above 39°F. Do not allow water or other chemicals to be introduced into contents of container. Do not contaminate water sources with equipment wash water, spray disposal wastes or by cleaning of equipment. Do not store near feed or food or consumer products.

8. Exposure Controls / Personal Protection Information

These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs. Waste resulting from these procedures should be handled in accordance with Section 13: Disposal Considerations.

Ingredients with workplace control parameters

Ingredients	Value type	Value	Basis
Ethylene Glycol Monobutyl Ether	TWA	5 ppm 24 mg/m3	NIOSH
	Potential for dermal absorption		
Ethylene Glycol Monobutyl Ether	TWA	20 ppm	ACGIH
	Upper Respiratory Tract irritation, Eye irritation, Substances for which there is a Biological Exposure Index or Indices (see BEI® section), Confirmed animal carcinogen with unknown relevance to humans		
Ethylene Glycol Monobutyl Ether	TWA	50 ppm 240 mg/m3	OSHA Z-1
	Skin designation, The value in mg/m3 is approximate.		
Ethylene Glycol Monobutyl Ether	TWA	25 ppm 120 mg/m3	OSHA Z-1-A
	Skin notation		
Ethanol	TWA	1,000 ppm 1,900 mg/m3	NIOSH
Ethanol	TWA	1,000 ppm 1,900 mg/m3	OSHA Z-1
	The value in mg/m3 is approximate.		
Ethanol	TWA	1,000 ppm 1,900 mg/m3	OSHA Z-1-A
Ethanol	STEL	1,000 ppm	ACGIH
	Upper Respiratory Tract irritation, Confirmed animal carcinogen with unknown relevance to humans		
Polyethylene Glycol	TWA	10 mg/m3	WEEL
	Form of exposure : aerosol		
NIOSH IDLH (Immediately Dangerous to Life or Health Concentrations)			
Ingredients	**CAS-No.**	**Concentration**	

Ethylene Glycol Monobutyl Ether	111-76-2	700 ppm	
Ethanol	64-17-5	3300 ppm	
Biological Exposure Indices			
Ingredients	**Value type**	**Value**	**Basis**
Ethylene Glycol Monobutyl Ether	BEI	Butoxyacetic acid (BAA) Urine	ACGIH
		End of shift (As soon as possible after exposure ceases)	

Engineering Measures:
Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: Effective exhaust ventilation system.

Personal Protective Equipment (PPE):
Respiratory protection:
When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Hand protection:
Recommended preventive skin protection: Gloves
Please observe the instructions regarding permeability and breakthrough time
which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

Eye protection:
Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.

Eye contact should be prevented through the use of:
Safety glasses with side-shields
Face-shield

Skin and body protection:
Recommended preventive skin protection. Footwear protecting against chemicals impervious clothing

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures:
Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or
handling this materials:
1) Do not store, use, and/or consume foods, beverages, tobacco products, or
cosmetics in areas where this material is stored.
2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
3) Wash exposed skin promptly to remove accidental splashes or contact with material.

Protective measures:
Ensure that eyewash stations and safety showers are close to the workstation location. Emergency equipment immediately accessible, with instructions for use. Use non-sparking tools only. The protective equipment must be selected in accordance with current local standards and in cooperation with the supplier of the protective equipment. Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the potential hazards, and/or risks that may occur during use.

9. Physical Chemical Properties Information

Appearance:
Form: viscous Physical state: liquid Color: clear Odor: odorless
Odor Threshold: no data available
pH: 6.5 - 8.0 (1 % (m/v))
Freezing point: < 30 °F (-1 °C)
Boiling point/boiling range: > 212 °F (100 °C) (760 mmHg (1,013.25 hPa))
Flash point: > 156 °F (69 °C) closed cup
Flammability class: Combustible
Evaporation rate (Butylacetate = 1): no data available
Flammability (solid, gas): no data available
Flammability (liquids): no data available
Flammability / Explosive limit: Lower flammability/explosion limit: 1.10 %(V)
Upper flammability/explosion limit: 19.00 %(V)
Autoignition temperature: no data available
Vapor pressure: < 23.5 mmHg (31.33 hPa) (77 °F (25 °C))
Vapor density: no data available
Density: 1 - 1.04 g/cm3 (77 °F (25 °C))
Solubility: Water solubility: soluble
Partition coefficient: n-octanol/water: no data available

Thermal decomposition: no data available
Viscosity: Viscosity, dynamic: 50 mPa.s (77 °F (25 °C))
Explosive properties: no data available
Oxidizing properties: no data available

Other information
Volatiles by Volume: < 61 %

10. Stability and Reactivity Information

Reactivity
No data available
Chemical stability
Chemical stability: Stable under recommended storage conditions.
Possibility of hazardous reactions
Polymerization: Hazardous polymerization does not occur.
Conditions to avoid
Conditions to avoid: Keep away from heat and sources of ignition.
Keep away from flames and sparks.
Incompatible materials
Materials to avoid: Strong reducing agents
Strong oxidizing agents
Hazardous decomposition products
Decomposition products: Carbon oxides
Sulfur oxides
Nitrogen oxides (NOx)

11. Toxicological Information

Acute toxicity
Acute oral toxicity: Not classified as harmful if swallowed According to the data on the components According to the classification criteria for mixtures.

Acute inhalation toxicity: Not classified as harmful by inhalation According to the data on the components According to the classification criteria for mixtures.

Acute dermal toxicity: Not classified as harmful by contact with skin According to the data on the components According to the classification criteria for mixtures.

Acute toxicity (other routes of administration): no data available

Skin corrosion/irritation
Skin irritation: Irritating to the skin.
According to the data on the components According to the classification criteria for mixtures

Active ingredient

Serious eye damage/eye irritation
Eye irritation: Risk of serious damage to eyes.
According to the data on the components According to the classification criteria for mixtures.

Respiratory or skin sensitization
Sensitization: Not classified as sensitizing by skin contact According to the data on the components According to the classification criteria for mixtures.

Mutagenicity
Genotoxicity in vitro: Product is not considered to be genotoxic According to the data on the components. According to the classification criteria for mixtures.

Genotoxicity in vivo: Product is not considered to be genotoxic According to the data on the components. According to the classification criteria for mixtures.

Carcinogenicity
Carcinogenicity: The product is not considered carcinogenic.

Ingredients	**CAS-No.**	**Rating**	**Basis**
Ethylene Glycol Monobutyl Ether	111-76-2	Confirmed animal carcinogen with unknown relevance to humans.	ACGIH
Ethanol	64-17-5	Confirmed animal carcinogen with unknown relevance to humans.	ACGIH

This product does not contain any ingredient designated as probable or suspected human carcinogens by: NTP, IARC, OSHA, ACGIH

Toxicity for reproduction and development
Toxicity to reproduction / fertility: According to the data on the components. The product is not considered to affect fertility.
According to the classification criteria for mixtures

Developmental Toxicity/Teratogenicity: According to the data on the components. The product is not considered to be toxic for development. The product is not considered to be teratogenic.
According to the classification criteria for mixtures.

STOT
STOT-single exposure: no data available
STOT-repeated exposure: no data available

Aspiration toxicity: no data available

12. Ecological Information

Ecotoxicity assessment
Acute aquatic toxicity: According to the data on the components
Toxic to aquatic life.
According to the classification criteria for mixtures.
Chronic aquatic toxicity: According to the data on the components
Harmful to aquatic life with long lasting effects.
According to the classification criteria for mixtures.

Biodegradability
Biodegradability: Inherently biodegradable.

13. Disposal Information

Chemical additions, processing or otherwise altering this material may makethe waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

This product is NOT an EPA hazardous waste.

Rinse with an appropriate solvent.
Dispose of contents/container in accordance with local regulation.

14. Transport Information

Transportation status: IMPORTANT! Statements below provide additional data on listed transport classification. The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

DOT
UN number NA 1993
Dangerous Good Description NA 1993 COMBUSTIBLE LIQUID, N.O.S. (ETHANOL, 2-BUTOXYETHANOL), III
Transport hazard class Combustible liquid.

Packing group
Packing group III
ERG No 128

Environmental hazards
Marine pollutant
NO
Special precautions for user
Remarks: The combustible liquid classification only applies when shipped in package sizes >119 gallons.
TDG
Not regulated
IMDG
Not regulated
IATA
Not regulated

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transportation regulations for hazardous materials, it would be advisable to check their validity with your sales office.

15. Regulatory Information

Notification status
United States TSCA Inventory: YES (positive listing)
Canadian Domestic Substances List (DSL): YES (positive listing)
All components of this product are on the Canadian DSL.
Australia Inventory of Chemical Substances (AICS): YES (positive listing)
On the inventory, or in compliance with the inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances: n (Negative listing)
Not in compliance with the inventory
Korea. Korean Existing Chemicals Inventory (KECI): n (Negative listing)
Not in compliance with the inventory
China. Inventory of Existing Chemical Substances in China (IECSC): YES (positive listing)
On the inventory, or in compliance with the inventory

Federal Regulations
SARA 311/312 Hazards
Fire Hazard yes
Reactivity Hazard no
Sudden Release of Pressure Hazard no
Acute Health Hazard yes
Chronic Health Hazard no

SARA 313: The following components are subject to reporting levels established by SARA Title III, Section 313: Ethylene Glycol Monobutyl Ether 111-76-2 12.5 %
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

Ingredients	CAS-No.	Reportable quantity	
1,4-Dioxane	123-91-1	100 lb	
Ethylene Oxide	75-21-8	10 lb	
Diethanolamine	111-42-2	100 lb	

SARA 304 Reportable Quantity

Ingredients	CAS-No.	Reportable quantity	
Ethylene Oxide		75-21-8	10 lb
Hydrogen peroxide (H2O2)	7722-84-1	1000 lb	

SARA 302 Reportable Quantity

Ingredients	CAS-No.	Reportable quantity	
Ethylene Oxide		75-21-8	10 lb
Hydrogen peroxide (H2O2)	7722-84-1	1000 lb	

16. Other Information

Date Prepared: 5/19/2015

NFPA-Classification
Health : 2 moderate
Flammability : 2 moderate
Instability or Reactivity : 0 minimal

HMIS-Classification
Health : 2 moderate
Flammability : 2 moderate
Reactivity : 0 minimal

Further information
Further information : Product classified under the US GHS format.

Key or legend to abbreviations and acronyms used in the safety data sheet
STEL : Short-term exposure limit
TWA : 8-hr TWA
ACGIH : American Conference of Governmental Industrial Hygienists
OSHA : Occupational Safety and Health Administration
WHMIS : Workplace Hazardous Materials Information System
NTP : National Toxicology Program
IARC : International Agency for Research on Cancer
SAEL : Solvay Acceptable Exposure Limit

NIOSH : National Institute for Occupational Safety and Health
NFPA : National Fire Protection Association
HMIS : Hazardous Materials Identification System (Paint & Coating)

The information provided in this Safety Data Sheet has been compiled from our experience and data presented in various technical publications. It is the user's responsibility to determine the suitability of this information for the adoption of safety precautions as may be necessary. We reserve the right to revise Safety Data Sheets from time to time as new technical information becomes available. The information contained herein is furnished without warranty of any kind.