Safety Data Sheet

Section 1. Identification

Product Identifier
Roger George Fog Fluid (Water Based)

Synonyms
PEG-200

Recommended use
Product is intended for professional Special Effects use only.

Uses advised against
Use of this material is at the sole risk of the purchaser.

Manufacturer Contact

Roger George Special Effects
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Van Nuys, CA 91411

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Section 2. Hazards Identification

Hazard Classification
GHS classification in accordance with 29 CFR 1910.1200

Not a hazardous substance or mixture

Section 3. Ingredients

CAS	Ingredient Name	Weight %
25322-68-3	Polyethylene glycol	>96.0 -<=100% -
111-46-6	Diethylene glycol	>=0.0-<4.0%
107-21-6	Ethylene glycol	>=0.0-<=1.0%

Section 4. First-Aid Measures

General Advice:	First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment. The most important known symptoms and effects are described in the label (section 2.2). Any additional important symptoms and effects are described in Section 11: Toxicology Information.
Inhalation:	Move person to fresh air; if effects occur, consult a physician.
Skin contact:	Wash off with plenty of water.
Eye contact:	Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
Ingestion:	If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.
Additional Information	Notes to physician: Due to structural analogy and clinical data, this material may have a mechanism of intoxication similar to ethylene glycol. On that basis, treatment similar to ethylene glycol intoxication may be of benefit. In cases where several ounces (60 - 100 ml) have been ingested, consider the use of ethanol and hemodialysis in the treatment. Consult standard literature for details of treatment. If ethanol is used, a therapeutically effective blood concentration in the range of 100 - 150 mg/dl may be achieved by a rapid loading dose followed by a continuous intravenous infusion. Consult standard literature for details of treatment. 4-Methyl pyrazole (Antizol®) is an effective blocker of alcohol dehydrogenase and should be used in the treatment of ethylene glycol (EG), di- or triethylene glycol (DEG, TEG), ethylene glycol butyl ether (EGBE), or methanol intoxication if available. Fomepizole protocol (Brent, J. et al., New England Journal of Medicine, Feb. 8, 2001, 344:6, p. 424-9): loading dose 15 mg/kg intravenously, follow by bolus dose of 10 mg/kg every 12 hours; after 48 hours, increase bolus dose to 15 mg/kg every 12 hours. Continue fomepizole until serum methanol, EG, DEG, TEG or EGBE are undetectable. The signs and symptoms of poisoning include anion gap metabolic acidosis, CNS depression, renal tubular injury, and possible late stage cranial nerve involvement. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. In severe poisoning, respiratory support with mechanical ventilation and positive end expiratory pressure may be required. Maintain adequate ventilation and oxygenation of the patient. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Section 5. Fire Fighting Measures

Suitable Extinguishing Media	Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers, Foam, and Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.
Unsuitable Extinguishing Media	Do not use direct water stream. May spread fire.
Hazardous combustion products:	During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide, Carbon dioxide.
Unusual Fire and Explosion Hazards:	Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.
Fire Fighting Procedures:	Keep people away. Isolate fire and deny unnecessary entry. Fight from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Use water spray to cool fire adjacent containers and surrounding fire affected zones until the fire is out and danger of reigniting has passed. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.
PPE for Firefighters:	Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing. This includes fire fighting helmet, coat, trousers, boots, and gloves. If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Section 6. Accidental Release Measures

Personal Precautions, PPE, Emergency Procedures:	Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
Environmental precautions:	Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Section 7. Handling and Storage

Precautions for safe handling:	See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.
Conditions for safe storage:	Store in original container. Use product promptly after opening. Store in the following material(s): Stainless steel. Polypropylene. Polyethylene-lined container. Teflon. Glass-lined container. Plasite 3066 lined container. Plasite 3070 lined container. 316 stainless steel.
Shelf Life:	Use within: 24 Months

Section 8. Exposure Controls/Personal Protection

Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value
Polyethylene glycol	US WEEL	TWA aerosol	10 mg/m3
Diethylene glycol	US WEEL	TWA	10 mg/m3
Ethylene glycol	Dow IHG	TWA	50 mg/m3
	Dow IHG	STEL	100 mg/m3
	ACGIH	TWA Vapour	25 ppm
	Further information: URT irr: Upper Respiratory Tract irritation; A4: Not classifiable as a human carcinogen		
	ACGIH	STEL Vapour	50 ppm
	Further information: URT irr: Upper Respiratory Tract irritation; A4: Not classifiable as a human carcinogen		
	ACGIH	STEL Inhalable fraction, Aerosol only	10 mg/m3
	Further information: URT irr: Upper Respiratory Tract irritation; A4: Not classifiable as a human carcinogen		

Personal Protective Equipment	Goggles, Gloves
Engineering Controls:	Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.
Eye/face protection:	Use safety glasses (with side shields).
Hand protection:	Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. If hands are cut or scratched, use gloves chemically resistant to this material even for brief exposures. Examples of preferred glove barrier materials include: Butyl rubber, Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.
Other protection:	When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full-body suit will depend on the task.
Respiratory protection	Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Section 9. Physical and Chemical Properties

Appearance	
Physical state	Liquid.
Color	Colorless
Odor	mild
Odor Threshold	No test data available
pH	4.5 - 7.5 *ASTM E70* (5% aqueous solution)
Melting point/range	Not applicable to liquids
Freezing point	-65 °C (-85 °F) *ASTM D1177* Sets to glass
Boiling point (760 mmHg)	> 200 °C (> 392 °F) *Calculated.* Decomposes
Flash point	185 °C (365 °F) *ASTM D 93*
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	Not applicable to liquids
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapor Pressure	< 0.01 mmHg at 20 °C (68 °F) *ASTM E1719*
Relative Vapor Density (air = 1)	1 *Calculated.*
Relative Density (water = 1)	1.126 at 20 °C (68 °F) / 20 °C *Calculated.*
Water solubility	at 20 °C (68 °F) *Measured* completely soluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No test data available
Decomposition temperature	No test data available
Kinematic Viscosity	4.0 - 4.8 cSt at 98.9 °C (210.0 °F) *ASTM D 445*
Explosive properties	No test data available
Oxidizing properties	No data available
Molecular weight	No data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

Section 10. Stability and Reactivity

Reactivity:	No data available.
Possibility of Hazardous Reactions:	Polymerizations will not occur.
Conditions to Avoid:	Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems.
Incompatible Materials:	Avoid contact with: Strong acids, Strong bases, and Strong oxidizers.
Hazardous Decomposition Products:	Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes, Alcohols, Ethers, Carbon dioxide, Carboxylic acids, and Polymer fragments.

Section 11. Toxicological Information

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity
Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

LD50, Rat, > 10,000 mg/kg

Acute dermal toxicity
Prolonged skin contact is unlikely to result in absorption of harmful amounts.
Prolonged/repeated exposure to damaged skin (as in burn patients) may result in absorption of toxic amounts.

Typical for this family of materials.
LD50, Rabbit, > 20,000 mg/kg

Acute inhalation toxicity
At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous. No adverse effects are anticipated from single exposure to mist. For respiratory irritation and narcotic effects: No relevant data found.

LC50, Rat, 6 Hour, dust/mist, > 2.5 mg/l No deaths occurred at this concentration.

Skin corrosion/irritation
Prolonged contact is essentially nonirritating to skin.
May cause more severe response if skin is abraded (scratched or cut).

Serious eye damage/eye irritation
May cause slight temporary eye irritation.
Corneal injury is unlikely.

Sensitization
Did not cause allergic skin reactions when tested in guinea pigs.
Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Recent findings of kidney failure and death in burn patients, as well as some studies using animal burn models, suggest that polyethylene glycol may have been a factor.
The use of topical applications containing this material may not be appropriate in severely burned patients.
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Carcinogenicity
Polyethylene glycols did not cause cancer in long-term animal studies.

Teratogenicity
Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive toxicity
In animal studies, did not interfere with reproduction.

Mutagenicity
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration Hazard
Based on physical properties, not likely to be an aspiration hazard.

Section 12. Ecological Information

Acute Toxicity to Fish:	Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested). LC50, Pimephales promelas (fathead minnow), static test, 96 Hour, > 10,000mg/l, OECD Test Guideline 203 or Equivalent.
Acute Toxicity to Aquatic Invertebrates	LC50, Daphnia magna (Water flea), 48 Hour, > 10,000 mg/l
Acute Toxicity to Algae/Aquatic Plants:	ErC50, Skeletonema costatum (marine diatom), 72 Hour, Growth rate, > 100mg/l.
Persistence and Degradability:	BIODEGRADABILITY: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. 10-day Window: Pass BIODEGRADATION: 85%. EXPOSURE TIME: 28 d. METHOD: OECD Test guideline 301F or Equivalent. Theoretical Oxygen Demand: 1.67 mg/mg
Bioaccumlative Potential:	BIOACCUMULATION: No bioconcenctration is expected because of the relatively high water solubility.
Mobility in Soil:	No relevant data found.

Section 13. Disposal

Disposal Methods:	DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information.

Section 14. Transport Information

DOT Classification	Not Regulated for transport
Classification for SEA transport (IMO-IMDG):	Not regulated for transport. Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code: Consult IMO regulations before transporting ocean bulk.
Classification for AIR transport (IATA/ICAO):	Not regulated for transport.
General:	This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

Section 15. Regulatory Information

SARA 311 & 312:	Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312: No SARA Hazards
SARA 313:	Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313: This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.
SARA 313 Components:	Diethylene glycol (111-46-6), Ethylene Glycol (107-21-1).
California Prop. 65:	WARNING: This product can expose you to chemicals including Ethylene glycol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Section 16. Other Information

Revision Date	8/20/2020
Company Policy/Disclaimer:	The information contained herein is presented in good faith and believed to be accurate as of the effective date shown above. The supplier nor any of its subsidiaries makes no representations as to its accuracy or sufficiency. This information is furnished without warranty of any kind. Conditions of use are beyond Roger George Special Effects' control and therefore users must determine whether the product is suitable for their particular purposes and they assume all risk of their use, handling and disposal of the product, or from the publications or use of, or reliance upon information contained herein. Employers should use this information only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. Any use of this data and information must be determined by the user to be in accordance with applicable federal, state and local laws and regulations. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process in which user assumes all responsibility.