MSDS Number: **T7332** * * * * * *Effective Date:* ***01/12/04*** * * * * * *Supercedes:* ***05/08/03***

MSDS MATERIAL SAFETY DATA SHEET **CHEMTREC:** 800-424-9300 (USA)

---------- 703-527-3887(Outside USA and Canada)

CANUTEC: 613-996-6666

From: Mallinckrodt Baker, Inc
222 Red School Lane
Phillipsburg, NJ 08865

NOTE: Use CHEMTREC and CANUTEC phone numbers only in the event of a chemical emergency.

Emergency Telephone Number: 908-859-2151

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

M A L L I N C K R O D T **J. T. B A K E R**

Octyl Phenol Ethoxylate

1. Product Identification

Synonyms: Octylphenoxypolyethoxyethanol nonionic surfactant; An alkylphenol-hydroxypolyoxyethlene; Alkylaryl polyether alcohol; TRITON® X-100
CAS No.: Not applicable to mixtures.
Molecular Weight: 624 (average)
Chemical Formula: C14H22O(C2H4O)n where the average number of ethylene oxide units per molecule ranges from 9 to 10
Product Codes:
J.T. Baker: X198, X200
Mallinckrodt: H282

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Polyethylene Glycol Octylphenyl Ether	9036-19-5	> 97%	Yes
Polyethylene Glycol	25322-68-3	< 3%	No
Dioxane	123-91-1	< 0.0055%	No
Ethylene Oxide	75-21-8	< 0.001%	No

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3. Hazards Identification

Emergency Overview

DANGER! CAUSES EYE BURNS. HARMFUL IF SWALLOWED OR INHALED. ASPIRATION MAY CAUSE LUNG DAMAGE. CAUSES IRRITATION TO SKIN AND RESPIRATORY TRACT.

J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 1 - Slight
Flammability Rating: 1 - Slight
Reactivity Rating: 1 - Slight
Contact Rating: 2 - Moderate
Lab Protective Equip: GOGGLES; LAB COAT; PROPER GLOVES
Storage Color Code: Orange (General Storage)

Potential Health Effects

Inhalation:
Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.
Ingestion:
Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea. Aspiration into the lungs may occur during swallowing or vomiting, resulting in lung damage.
Skin Contact:

Brief contact may have no effect. Prolonged or repeated contact may cause irritation, redness, itching and pain.

Eye Contact:

Can cause severe eye irritation with symptoms of inflammation, tearing, blinking, redness, swelling of the conjunctiva, and chemical burns of the cornea.

Chronic Exposure:

No information found.

Aggravation of Pre-existing Conditions:

No information found.

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4. First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:

If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Note to Physician:

There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient. Any material aspirated during vomiting may cause lung injury. Therefore, emesis should not be induced mechanically or pharmacologically. If it is considered necessary to evacuate the stomach contents, this should be done by means least likely to cause aspiration (e.g., gastric lavage after endotracheal intubation).

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5. Fire Fighting Measures

Fire:

Flash point: 251C (484F) CC

Slight fire hazard when exposed to heat or flame.

Contact with strong oxidizing or reducing agents may create a fire or

explosion hazard.

Explosion:

Not considered to be an explosion hazard. Sensitive to static discharge.

Fire Extinguishing Media:

Water spray, dry chemical, alcohol foam, or carbon dioxide. Do not use heavy stream of water; material will float, and spread fire.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! Guard against falls as material is slippery. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

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7. Handling and Storage

Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product. This product may contain trace amounts of ethylene oxide, a condition which creates the potential for accumulation of ethylene oxide in the head space of shipping and storage containers and in areas where the product is being handled or used. Ethylene oxide is a potential carcinogen for humans. At excess levels, ethylene oxide can present dangerous health hazards to humans. If this product is handled with adequate ventilation, the presence of these trace amounts is not expected to result in any short or long term hazard.

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8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
For Ethylene oxide:
- OSHA Permissible Exposure Limit (PEL) -
1 ppm (TWA), 0.5 ppm (Action level), 5 ppm (STEL).
- ACGIH Threshold Limit Value (TLV) -
1 ppm (TWA), A2 - suspected human carcinogen.

Ventilation System:
In general, dilution ventilation is a satisfactory health hazard control for this substance. However, if conditions of use create discomfort to the worker, a local exhaust system should be considered.

Personal Respirators (NIOSH Approved):
Not expected to require personal respirator usage. For conditions of use where exposure to the substance is apparent and engineering controls are not feasble, consult an industrial hygienist. For emergencies, or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres. Where respirators are required, you must have a written program covering the basic requirements in the OSHA respirator standard. These include training, fit testing, medical approval, cleaning, maintenance, cartridge change schedules, etc. See 29CFR1910.134 for details.

Skin Protection:
Wear protective gloves and clean body-covering clothing.

Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Other Control Measures:
This product may not be exempt from OSHA's Ethylene Oxide Standard , 29CFR1910.1047. Users should comply with all applicable provisions.

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9. Physical and Chemical Properties

Appearance:
Transparent pale yellow, viscous, liquid.

Odor:
Mild odor.

Solubility:
Miscible in water.

Specific Gravity:
1.067

pH:

7 (5% solution)
% Volatiles by volume @ 21C (70F):
0.0065
Boiling Point:
> 200C (> 392F)
Melting Point:
6C (43F)
Vapor Density (Air=1):
> 1.0
Vapor Pressure (mm Hg):
< 0.01 @ 20C (68F)
Evaporation Rate (BuAc=1):
< 0.01

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10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage. Viscosity increases as temperature decreases and handling becomes difficult below 68F.
Hazardous Decomposition Products:
Carbon dioxide and carbon monoxide may form when heated to decomposition.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Strong oxidizers, strong acids and strong bases. Corrosive to copper and brass.
Conditions to Avoid:
Heat and incompatibles.

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11. Toxicological Information

Toxicological Data:
For Triton X-100: LD50 oral rat 1800 mg/kg. For Polyethylene glycol octylphenyl ether: LD50 oral rat 4190 mg/kg; Irritation (Std Draize, eye, rabbit) 1% severe. Investigated as a mutagen. Polyethylene glycol has been investigated as a mutagen.
Carcinogenicity:
This product may contain trace amounts of ethylene oxide and dioxane.
Ethylene Oxide: NIOSH considers this substance to be a potential occupational carcinogen. Regulated by OSHA as a carcinogen.
Dioxane: NIOSH considers this substance to be a potential occupational

carcinogen. EPA / IRIS classification: Group B2 - Probable human carcinogen, sufficient animal evidence.

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Polyethylene Glycol Octylphenyl Ether (9036-19-5)	No	No	None
Polyethylene Glycol (25322-68-3)	No	No	None
Dioxane (123-91-1)	No	Yes	2B
Ethylene Oxide (75-21-8)	Yes	No	1

12. Ecological Information

Environmental Fate:
No information found.
Environmental Toxicity:
For Triton X-100: The LC50/96-hour values for fish are between 1 and 10 mg/l. This material is expected to be toxic to aquatic life.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Surfactants can cause foaming problems in biological wastewater treatment plants and other high shear operations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\------------------------
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Ingredient	TSCA	EC	Japan	Australia
Polyethylene Glycol Octylphenyl Ether (9036-19-5)	Yes	No	Yes	Yes
Polyethylene Glycol (25322-68-3)	Yes	No	Yes	Yes
Dioxane (123-91-1)	Yes	Yes	Yes	Yes
Ethylene Oxide (75-21-8)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\------------------------
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		--Canada--		
Ingredient	Korea	DSL	NDSL	Phil.
Polyethylene Glycol Octylphenyl Ether (9036-19-5)	Yes	Yes	No	Yes
Polyethylene Glycol (25322-68-3)	Yes	Yes	No	Yes
Dioxane (123-91-1)	Yes	Yes	No	Yes
Ethylene Oxide (75-21-8)	Yes	Yes	No	Yes

--------\Federal, State & International Regulations - Part 1\--------
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	-SARA 302-		------SARA 313------	
Ingredient	RQ	TPQ	List	Chemical Catg.
Polyethylene Glycol Octylphenyl Ether (9036-19-5)	No	No	No	No
Polyethylene Glycol (25322-68-3)	No	No	No	No
Dioxane (123-91-1)	No	No	Yes	No
Ethylene Oxide (75-21-8)	10	1000	Yes	No

--------\Federal, State & International Regulations - Part 2\--------
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		-RCRA-	-	TSCA-
Ingredient	CERCLA	261.33	8(d)	

Polyethylene Glycol Octylphenyl Ether (9036-19-5)	No	No	Yes
Polyethylene Glycol (25322-68-3)	No	No	No
Dioxane (123-91-1)	100	U108	No
Ethylene Oxide (75-21-8)	10	U115	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No
Reactivity: No (Mixture / Liquid)

WARNING:
THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

Australian Hazchem Code: None allocated.
Poison Schedule: S6
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

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16. Other Information

NFPA Ratings: Health: **2** Flammability: **1** Reactivity: **0**
Label Hazard Warning:
DANGER! CAUSES EYE BURNS. HARMFUL IF SWALLOWED OR INHALED. ASPIRATION MAY CAUSE LUNG DAMAGE. CAUSES IRRITATION TO SKIN AND RESPIRATORY TRACT.
Label Precautions:
Do not get in eyes.
Avoid contact with skin and clothing.
Wash thoroughly after handling.
Avoid breathing mist.
Keep container closed.
Use only with adequate ventilation.
Label First Aid:
In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases, get

medical attention.

Product Use:

Laboratory Reagent.

Revision Information:

MSDS Section(s) changed since last revision of document include: 1.

Disclaimer:

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