SAFETY DATA SHEETS

This SDS packet was issued with item:

078567102

N/A

fougera PHARMACEUTICALS INC.

MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, and Canadian WHMIS

PART I *What is the material and what do I need to know in an emergency?*

1. PRODUCT IDENTIFICATION

TRADE NAME/MATERIAL NAME: **Betamethasone Valerate Lotion USP 0.1%**

DESCRIPTION:	Betamethasone Valerate Lotion USP
NDC #:	0168-0041-60
CHEMICAL NAME (for active ingredient):	9-fluoro-11β,17,21-trihydroxy-16β-methylpregna-1,4-diene-3,20-dione 17-Valerate
CHEMICAL FAMILY (for active ingredient):	Corticosteroid
HOW SUPPLIED:	0.1% Lotion
FORMULA (for active ingredient):	$C_{28}H_{37}FO_7$
PRODUCT USE:	Pharmaceutical for Human Use
SUPPLIER/MANUFACTURER'S NAME:	**FOUGERA PHARMACEUTICALS INC.**
ADDRESS:	60 Baylis Road Melville, NY 11747
BUSINESS PHONE/GENERAL MSDS INFORMATION:	1-631-454-7677
EMERGENCY PHONE (U.S./Canada/Puerto Rico):	**1-800-424-9300 (24-hr)**
EMERGENCY PHONE (OUTSIDE U.S.):	**+1-631-454-7677**

NOTE: ALL United States Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, and Canadian WHMIS [Controlled Products Regulations] required information is included in appropriate sections based on the U.S. ANSI Z400.1-2004 format. This product has been classified in accordance with the hazard criteria of the countries listed above.

2. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: Product Description: This product is a slightly turbid, viscous liquid. ***Health Hazards:*** Employees administering the product should not experience adverse effects if handled properly. The chief health hazard associated with exposure during normal use and handling is the potential for irritation of contaminated skin. Individuals who have had allergic reactions to products containing the active ingredient, Betamethasone Valerate (or any other components of this product) may experience allergic reactions to this product. Repeated skin exposure to Betamethasone Valerate may cause adverse reproductive effects, based on animal data. ***Flammability Hazards:*** This product is flammable. It is readily ignited under ambient conditions. Vapors from the Isopropyl Alcohol component of this product are heavier than air and may travel to a source of ignition and flashback to a leak or open container. ***Reactivity Hazards:*** This product is not reactive. ***Environmental Hazards:*** This product has not been tested for environmental effects. ***Emergency Considerations:*** Emergency responders should wear appropriate protection for situations to which they respond.

3. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	% w/w
Betamethasone Valerate	2152-44-5	0.1%
Isopropyl Alcohol	67-63-0	Proprietary
Water and other components. Each of the other components is present in less than 1 percent concentration (0.1% concentration for potential carcinogens, reproductive toxins, respiratory tract sensitizers, and mutagens).	The remaining components do not contribute any significant additional hazards.	Balance

PART II *What should I do if a hazardous situation occurs?*

4 FIRST-AID MEASURES

Persons developing hypersensitivity reactions should receive medical attention. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Take a copy of label and MSDS to physician or health professional with the contaminated individual.

SKIN EXPOSURE: If adverse skin effects occur, discontinue use. Seek medical attention.

EYE EXPOSURE: If this product contaminates the eyes, rinse eyes under gently running water. Use sufficient force to open eyelids and then "roll" eyes while flushing. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effect continues after rinsing.

INHALATION: If vapors of this product are inhaled, causing irritation, remove victim to fresh air. If necessary, use artificial respiration to support vital functions.

INGESTION: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open airway and obtain immediate medical attention.

4 FIRST-AID MEASURES (Continued)

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing skin conditions may be aggravated by repeated overexposures to this product.

RECOMMENDATIONS TO PHYSICIANS: This product should only be given to patients by persons experienced in management of patients receiving the type of therapy intended for this product. Treat symptoms and eliminate exposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: 16°C (60.8°F) Pensky-Martens Closed Cup

NOTE: The following values have not been determined for the product; values given are for the main flammable component, Isopropyl Alcohol.

AUTOIGNITION TEMPERATURE: 399°C (750°F)

FLAMMABLE LIMITS (in air by volume, %):

Lower (LEL): 2.0% *Upper (UEL):* 12.7%

FIRE EXTINGUISHING MEDIA: Use extinguishing media appropriate for surrounding fire.

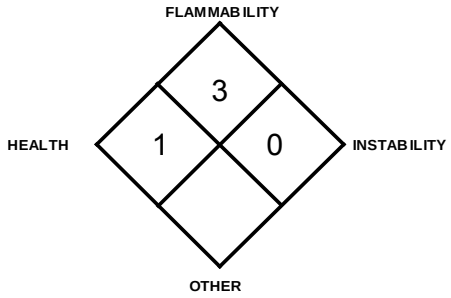
UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

SPECIAL FIRE AND EXPLOSION HAZARDS: This product is flammable; it can be readily ignited under ambient conditions. When involved in a fire, this material may decompose and produce irritating vapors and toxic compounds (including carbon oxides and hydrogen fluoride).

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: The vapors of this product may be ignited by static electrical energy.

NFPA RATING



Hazard Scale: **0** = Minimal **1** = Slight **2** = Moderate **3** = Serious **4** = Severe

ADVICE TO FIRE-FIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus (SCBA) and full protective equipment. Chemical resistant clothing may be necessary. If protective equipment is contaminated by this product, it should be thoroughly washed with running water prior to removal of SCBA respiratory protection. Firefighters whose protective equipment becomes contaminated should thoroughly shower with warm, soapy water and should receive medical evaluation if they experience any adverse effects. Move containers from fire area if it can be done without risk to personnel. Water spray can be used to cool fire-exposed containers. Water fog or spray can also be used by trained firefighters to disperse this product's vapors and to protect personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Proper protective equipment should be used. In the event of a spill, clear the area and protect people. Eliminate all sources of ignition before cleanup begins. Use non-sparking tools. Monitor area for combustible vapor levels to determine level of combustible vapors before personnel are allowed into the spill area. The atmosphere must have levels of components lower than those listed in Section 8, (Exposure Controls and Personal Protective Equipment) if applicable, and have at least 19.5 percent oxygen before personnel can be allowed into the area without Self-Contained Breathing Apparatus (SCBA).

Small Spills: Wear goggles and gloves while wiping up small spills of this product with polypad or sponge.

Large Spills: Trained personnel following pre-planned procedures should handle non-incidental releases. Access to the spill areas should be restricted. Protective apparel should be used with a respirator when there is any danger of mists or sprays being generated. Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit**.** The dispersal of mists or sprays into surrounding air and the possibility of inhalation is a serious matter and should be treated as such. Minimum level of personal protective equipment for releases in which the level of oxygen is less than 19.5% or is unknown must be **Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), chemical resistant suit and boots, hard hat, and Self-Contained Breathing Apparatus.** Absorb spilled liquid using polypads or other suitable absorbent material. Prevent material from entering sewer or confined spaces, waterways, soil or public waters. Monitor area and confirm levels are bellow exposure limits given in Section 8 (Exposure Controls-Personal Protection), if applicable, before non-response personnel are allowed into the spill area.

Decontaminate the area of the spill thoroughly using detergent and water. Place all spill residue in an appropriate container and seal. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

PART III *How can I prevent hazardous situations from occurring?*

7. HANDLING and USE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Do not eat, drink, smoke, or apply cosmetics while handling this product. Wash hands thoroughly after handling this product or equipment and containers that contain this product. Follow SPECIFIC USE INSTRUCTIONS supplied with this product. Particular care in working with this product must be practiced in pharmacies and other preparation areas, during manufacture of this product, and during patient administration.

7. HANDLING and USE (Continued)

STORAGE AND HANDLING PRACTICES: Employees must be trained to properly use this product. Keep away from heat, sparks, and other sources of ignition. Use non-sparking tools. Use of this product should be performed in a designated area for working with drugs. Ensure product is properly labeled. Store this product away from incompatible materials. Store this product in original container. Storage areas should be made of fire resistant materials. Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Have appropriate extinguishing equipment in the storage area (i.e., sprinkler system, portable fire extinguishers). Empty packages may contain residual liquid or vapors that are flammable; therefore, empty packages should be handled with care. Refer to NFPA 30, *Flammable and Combustible Liquids Code*, for additional information on storage.

PRODUCT PREPARATION INSTRUCTIONS FOR MEDICAL PERSONNEL: Handle this material following standard medical practices and following the recommendations presented on the Package Insert.

SPECIFIC USE(S): This product is a human pharmaceutical. Follow all industry standards for use of this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: When cleaning non-disposable equipment, wear latex or butyl rubber (double gloving is recommended), goggles, and lab coat. Wash equipment with soap and water. Wipe equipment down with damp sponge or polypad. Collect all rinsates and dispose of according to applicable U.S. Federal, State, and local hazardous waste disposal regulations or waste disposal regulations of Canada. All disposable items contaminated with this product should be disposed of properly.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation. Follow standard medical product handling procedures. During decontamination of work surfaces, workers should wear the same equipment recommended in Section 6 (Accidental Release Measures) of this MSDS.

EXPOSURE LIMITS/GUIDELINES:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH	OTHER
		TWA mg/m^3	STEL mg/m^3	TWA mg/m^3	STEL mg/m^3	TWA mg/m^3	STEL mg/m^3	IDLH mg/m^3	mg/m^3
Betamethasone Valerate	2152-44-5	NE	NE	NE	NE	NE	NE	NE	NE
Isopropyl Alcohol	67-63-0	492	984	980	1225 (vacated 1989 PEL)	980	1225	4920	DFG MAK: TWA = 500 PEAK = 2•MAK 15 min., average value, 1 hour interval, 4 per shift Pregnancy Risk Group Classification: C

NE = Not Established See Section 16 for Definitions of Other Terms Used

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standards of Canada (including CSA Standard Z94.4-02 and CSA Standard Z94.3-07). Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION: A respirator is not required for routine conditions of use of this product. If respiratory protection is needed, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, or Canadian CSA Standard Z94.4-02. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998).

EYE PROTECTION: Not normally needed during normal use. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or Canadian CSA Standard Z94.3-07.

HAND PROTECTION: For situations in which prolonged skin contact is anticipated, double glove, using latex, nitrile, or rubber gloves. Check gloves for leaks. Wash hands before putting on gloves and after removing gloves. Gloves should cover the gown cuff. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate standards of Canada.

BODY PROTECTION: During patient administration, use of lightweight cotton gown or other medical attire is recommended. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136 and the Canadian CSA Standard Z195-02, *Protective Footwear*.

9. PHYSICAL and CHEMICAL PROPERTIES

BOILING POINT: 80-85°C (176-185°F)
FREEZING/MELTING POINT: 40-50°C (100-122°F)
EVAPORATION RATE (nBuAc = 1): 0.02
SOLUBILITY IN WATER: Soluble.
VAPOR PRESSURE (air = 1): Not established.
SPECIFIC GRAVITY (water = 1): < 1
ODOR THRESHOLD: Not established.
pH: 4-6
COEFFICIENT WATER/OIL DISTRIBUTION: Not established.
APPEARANCE AND COLOR: This product is a slightly turbid, viscous liquid.
HOW TO DETECT THIS SUBSTANCE (warning properties): The appearance of this product can be a distinguishing characteristic to identify it in event of accidental release.

10. STABILITY and REACTIVITY

REACTIVITY/CHEMICAL STABILITY: This product is stable.

DECOMPOSITION PRODUCTS: *Combustion:* If exposed to extremely high temperatures, thermal decomposition may generate irritating fumes and toxic gases (e.g., carbon oxides and hydrogen fluoride). *Hydrolysis:* None known.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product is generally compatible with other common materials in a medical facility. Acids, caustics, and other chemicals that could affect its performance should be avoided.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Avoid heat, light, and contact with incompatible chemicals.

PART IV *Is there any other useful information about this material?*

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE: The health hazard information provided below is pertinent to medical employees handling this product in an occupational setting. This product is designed for application on the skin. The following paragraphs describe the symptoms of exposure by route of exposure.

INHALATION: Inhalation of vapors of this product, especially in a poorly ventilated space, may cause flushing, decreased pulse rate, drop in blood pressure, numbness, narcosis, headache, dizziness, mental depression, hallucinations, distorted perception, difficulty breathing, respiratory depression, nausea, vomiting, and coma.

CONTACT WITH SKIN or EYES: Skin contact may cause burning sensation, stinging, prickling, itching, and tingling. Corticosteroids (such as Betamethasone Valerate) may cause allergic contact dermatitis. This is usually diagnosed by observing a failure to heal rather than a clinical exacerbation. Eye contact can cause irritation, stinging, redness, and tearing.

SKIN ABSORPTION: The Betamethasone Valerate component of this product can be absorbed through intact skin. Symptoms of chronic overexposure by this route may include reversible hypothalamic-pituitaryadrenal (HPA) axis suppression, abnormal accumulations of facial and trunk fat, fatigue, high blood pressure, osteoporosis, abnormally high level of glucose in the blood, and abnormally high levels of glucose in the urine.

INGESTION: Ingestion is not a significant route of occupational overexposure. Acute ingestion of large quantities of this product or chronic ingestion caused by poor hygiene practices may cause adverse symptoms. Symptoms of ingestion overexposure may include nausea, vomiting, and diarrhea. Symptoms of ingestion overexposure may include nausea, vomiting, diarrhea, and respiratory distress. Ingestion can also cause symptoms as described under “Inhalation”.

INJECTION: Though not anticipated to be a significant route of exposure for this product, injection (via punctures or lacerations by contaminated objects) may cause redness at the site of injection. Symptoms may include those described for “Other Potential Health Effects”.

GENERAL TOXICITY INFORMATION: Individuals who have had allergic reactions to products containing the Betamethasone Valerate component of this product or any other components of this product may experience allergic reactions to this product. Persons using the product in therapeutic doses may experience burning, itching, irritation, dryness, inflammation of hair follicles, excessive hair growth, acne-form eruptions, diminished pigmentation, dermatitis around the mouth, allergic contact dermatitis, softening of the skin, secondary infections, striae, and prickly heat.

IRRITANCY OF PRODUCT: This product may mildly to moderately irritate contaminated tissue.

SENSITIZATION OF PRODUCT: Corticosteroids (such as Betamethasone Valerate) may cause allergic contact dermatitis.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Overexposure to this product may cause the following health effects:

Acute: The primary health effects that may be experienced by medical personnel exposed to this product is mild irritation of contaminated skin. Accidental ingestion may be harmful. Inhalation of vapors in a poorly ventilated space can cause central nervous system effects. Eye contact will cause irritation.

Chronic: Corticosteroids (such as Betamethasone Valerate) may cause allergic contact dermatitis. Symptoms of chronic skin absorption exposure may include reversible hypothalamic-pituitaryadrenal (HPA) axis suppression, abnormal accumulations of facial and trunk fat, fatigue, high blood pressure, osteoporosis, abnormally high level of glucose in the blood, and abnormally high levels of glucose in the urine.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD	(BLUE)	1
FLAMMABILITY HAZARD	(RED)	3
PHYSICAL HAZARD	(YELLOW)	0

PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8

For Routine Industrial Use and Handling Applications

Hazard Scale: **0** = Minimal **1** = Slight **2** = Moderate **3** = Serious **4** = Severe * = Chronic hazard

11. TOXICOLOGICAL INFORMATION (Continued)

TARGET ORGANS:

Acute: Occupational Exposure: Skin, central nervous system. *Therapeutic Doses:* Skin.

Chronic: Occupational Exposure: Skin. *Therapeutic Doses:* Skin, endocrine system.

TOXICITY DATA: Only toxicity data available for the active component of this product are presented in this MSDS. Additional data are available for the excipient components of this product, but are not presented in this MSDS; Contact Fougera for more information.

BETAMETHASONE VALERATE:

LD_{50} (Oral-rat) > 3 g/kg; Skin and Appendages: hair

LD_{50} (Oral-mouse) 4067 mg/kg

LD_{50} (Intraperitoneal - rat) > 4500 mg/kg; Skin and Appendages: hair

LD_{50} (Intraperitoneal-mouse) 632 mg/kg

LDLo (Subcutaneous-rat) 2 g/kg

LD_{50} (Subcutaneous-mouse) 496 mg/kg

LD_{50} (Subcutaneous-rabbit) 61200 µg/kg; Eye: lacrymation; Gastrointestinal: hypermotility, diarrhea

TDLo (skin-rat) 87500 mg/kg/35 days-intermittent: Endocrine: changes in thymus weight; Blood: changes in leukocyte (WBC) count; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: transaminases

TDLo (ski-rat) 9 mg/kg/30 days-intermittent: Blood; changes in bone marrow (not otherwise specified); Nutritional and Gross Metabolic: weight loss or decreased weight gain; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: transaminases

TDLo (skin-rat) 18 mg/kg/26 weeks-intermittent: Cardiac: changes in heart weight; Liver: changes in liver weight; Blood: changes in leukocyte (WBC) count

TDLo (skin-rat) 42 mg/kg/5 weeks-intermittent: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol), changes in leukocyte (WBC) count; Nutritional and Gross Metabolic: weight loss or decreased weight gain

TDLo (skin-rat) 19,800 µg/kg/female 7–17 days after conception; Reproductive: Maternal Effects: parturition; Effects on Fetus: fetotoxicity (except death, e.g., stunted fetus), fetal death

BETAMETHASONE VALERATE (continued):

TDLo (skin-rat) 19800 µg/kg/female 7–17 days after conception; Reproductive: Effects on Newborn: stillbirth, live birth index (measured after birth), sex ratio

TDLo (skin-rat) 19800 µg/kg/female 7–17 days after conception; Reproductive: Specific Developmental Abnormalities: musculoskeletal system

TDLo (skin-dog) 91 mg/kg/91 days/intermediate; Kidney, Ureter, Bladder: urine volume increased; Endocrine: changes in adrenal & thymus weight

TDLo (skin-rabbit) 7500 µg/kg/female 7–18 days after conception; Reproductive: Fertility: abortion; Effects on Fetus: fetal death; Effects on Newborn: stillbirth

TDLo (skin-rabbit) 1500 µg/kg/female 7–18 days after conception; Reproductive: Effects on Fetus: fetotoxicity (except death, e.g., stunted fetus)

TDLo (Subcutaneous-rat) 3500 µg/kg/35 days/intermediate; Liver: changes in liver weight; Endocrine: changes in adrenal weight; Blood: changes in leukocyte (WBC) count

TDLo (Subcutaneous-rat) 44 mg/kg/female 7–17 days after conception; Reproductive: Maternal Effects: uterus, cervix, vagina; Fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants); Effects on Fetus: fetal death

TDLo (Subcutaneous-rat) 175 mg/kg/35 days/intermediate; Nutritional and Gross Metabolic: weight loss or decreased weight gain; Related to Chronic Data: death

TDLo (Subcutaneous-rat) 12 mg/kg/30 days/intermediate; Endocrine: changes in spleen weight; Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Related to Chronic Data: changes in uterine weight

BETAMETHASONE VALERATE (continued):

TDLo (Subcutaneous-rat) 1100 µg/kg/female 7–17 days after conception; Reproductive: Effects on Fetus: fetotoxicity (except death, e.g., stunted fetus); Reproductive: Specific Developmental Abnormalities: musculoskeletal system

TDLo (Subcutaneous-rat) 44 mg/kg/female 7–17 days after conception; Reproductive: Specific Developmental Abnormalities: craniofacial (including nose and tongue), body wall

TDLo (Subcutaneous-mouse) 1 mg/kg/female 11 days after conception; Reproductive: Effects on Fetus: fetotoxicity (except death, e.g., stunted fetus)

TDLo (Subcutaneous-mouse) 1 mg/kg/female 14 days after conception; Reproductive: Effects on Fetus: fetal death

TDLo (Subcutaneous-mouse) 3300 µg/kg/female 12 days after conception; Reproductive: Specific Developmental Abnormalities: craniofacial (including nose and tongue)

TDLo (Subcutaneous-rabbit) 1300 µg/kg/female 6–18 days after conception; Reproductive: Maternal Effects: uterus, cervix, vagina; Fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants); Effects on Fetus: fetotoxicity (except death, e.g., stunted fetus)

TDLo (Subcutaneous-rabbit) 1300 µg/kg/female 6–18 days after conception; Reproductive: Effects on Fetus: fetal death; Specific Developmental Abnormalities: Central Nervous System, eye/ear

TDLo (Subcutaneous-rabbit) 1300 µg/kg/female 6–18 days after conception; Reproductive: Specific Developmental Abnormalities: craniofacial (including nose and tongue), body wall, musculoskeletal system

CARCINOGENIC POTENTIAL: Long-term animal studies have not been performed to evaluate the carcinogenic potential of topical corticosteroids. The incipient components of this product are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows:

ISOPROPYL ALCOHOL: IARC-3 (Not Classifiable as to Carcinogenicity to Humans); ACGIH-TLV-A4 (Not Classifiable as a Human Carcinogen)

The remaining components of this product are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, or ACGIH and therefore are neither considered to be nor suspected to be cancer-causing agents by these agencies.

REPRODUCTIVE TOXICITY INFORMATION: The active component of this product, Betamethasone Dipropionate, is rated as Pregnancy Category C (RISK CANNOT BE RULED OUT; Human evidence is lacking, but animal evidence is positive.). Listed below is information concerning the effects of this product and its components on animal or human reproductive systems.

Mutagenicity: Betamethasone was positive in the *in vitro* human lymphocyte chromosome aberration assay, and equivocal in the *in vivo* mouse bone marrow micronucleus assay. It was negative in the bacterial mutagenicity assay (*Salmonella typhimurium* and *Escherichia coli*), and in the mammalian cell mutagenicity assay (CHO/HGPRT).

Embryotoxicity: Animal studies have not been performed to evaluate the embryotoxicity of Betamethasone Dipropionate. No human data are available.

Teratogenicity: Betamethasone Dipropionate has been shown to be teratogenic in rabbits when given by the intramuscular route at doses of 0.05 mg/kg. This dose is approximately 0.2 fold the maximum human dose based on a mg/m^2 comparison. The abnormalities observed included umbilical hernias, cephalocele, and cleft palates. Some corticosteroids have been shown to be teratogenic after dermal application in laboratory animals. No human data are available.

Reproductive Toxicity: Reproductive studies with Betamethasone Dipropionate carried out in rabbits at doses of 1.0 mg/kg by the intramuscular route and in mice up to 33 mg/kg by the intramuscular route indicated no impairment of fertility except for dose-related increases in fetal resorption rates in both species. These does are approximately 5 and 38 fold the human dose based on a mg/m^2 comparison, respectively. No human data are available.

ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, ACGIH Biological Exposure Indices (BEIs) have been determined for components of this product.

CHEMICAL: DETERMINANT	SAMPLING TIME	BEI
Isopropyl Alcohol • Acetone in urine	• End of Shift End of Workweek	• 40 mg/L

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: This product has not been tested for soil absorption or mobility. The following information is available for the components of this product:

ISOPROPYL ALCOHOL:

The Koc of Isopropanol is estimated as 25, using a measured log Kow of 0.05 and a regression-derived equation. According to a classification scheme, this estimated Koc value suggests that Isopropanol is expected to have very high mobility in soil.

PERSISTENCE AND BIODEGRADABILITY: This product has not been tested for persistence or biodegradability. The following information is available for the components of this product:

ISOPROPYL ALCOHOL:

Based on a classification scheme, an estimated Koc value of 25, determined from a log Kow of 0.05 and a regression-derived equation, indicates that Isopropanol is expected to have very high mobility in soil. Volatilization of Isopropanol from moist soil surfaces is expected to be an important fate process given a Henry's Law constant of 8.10X10-6 atm-cu m/mole. The potential for volatilization of Isopropanol from dry soil surfaces may exist based upon a vapor pressure of 45.4 mmHg. Isopropanol is readily degraded in aerobic systems; the range of half-lives for aerobic degradation using a sewage sludge inoculum are < 1 day to 48 days. Isopropanol has also been shown to be readily degraded under anaerobic conditions. Volatilization from water surfaces is expected based upon a Henry's Law constant of 8.10X10-6 atm-cu m/mole. Using this Henry's Law constant and an estimation method, volatilization half-lives for a model river and model lake are 57 hours and 29 days, respectively. Isopropanol is readily degraded in aerobic systems; the range of half-lives for aerobic degradation using a sewage sludge inoculum are < 1 day to 48 days. Isopropanol has also been shown to be readily degraded under anaerobic conditions. According to a model of gas/particle partitioning of semi-volatile organic compounds in the atmosphere, Isopropanol, which has a vapor pressure of 45.4 mm Hg at 25°C, is expected to exist solely as a vapor in the ambient atmosphere. Vapor-phase Isopropanol is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 3.2 days, calculated from its rate constant of 5.07X10-12 cu cm/molecule-sec at 25°C.

BIOACCUMULATION: This product has not been tested for bioconcentration. The following information is available for the components of this product:

ISOPROPYL ALCOHOL:

An estimated BCF of 3 was calculated for Isopropanol, using a log Kow of 0.05 and a regression-derived equation. According to a classification scheme, this BCF suggests the potential for bioconcentration in aquatic organisms is low.

ECOTOXICITY: No specific information is currently available on the effect of this product on plants or animals in the environment. This product may be harmful to contaminated terrestrial and aquatic plant and animal life, especially in large quantities. The following are aquatic toxicity data currently available for components of this product.

ISOPROPYL ALCOHOL:

EC_0 (*Microcystis aeruginosa*) 8 days = 1,000 mg/L
EC_0 (*Scenedesmus quadricauda* green algae) 7 days = 1,800 mg/L
EC_0 (*Entosiphon sulcatum* protozoa) 72 hours = 4,930 mg/L
EC_0 (Uronema parduczi Chatton-Lwoff) = 3,425 mg/L
EC_{50} (*Photobacterium*) 5 minutes = 22,800 mg/L
EC_{50} (*Daphnia magna*) 3,010 mg/L
EC_{50} (*Pseudomonas putida*) 16 hours = 1,050 mg/L
Toxic (*Chlorella pyrenoidosa* algae) = 17,400 mg/L
NOEC (*Daphnia magna*) 757-2,100 mg/L
LC_0 (creek chub) 24 hours = 900 mg/L
LC_{50} (*Artemia salina*) 24 hours = 16,700 mg/L
LC_{50} (*Streptocephalus proboscideus*) 24 hours = 11,600 mg/L

ISOPROPYL ALCOHOL (continued):

LC_{50} (*Daphnia magna*) 24 hours = 9,500 mg/L
LC_{50} (*Brachionus calyciflorus*) 24 hours = 28,600 mg/L
LC_{50} (*Crangon crangon* brown shrimp) 48 hours = 1,400 mg/L
LC_{50} (*Crangon crangon* brown shrimp) 98 hours = 1,150 mg/L
LC_{50} (goldfish) 24 hours = > 500 mg/L
LC_{50} (fathead minnow) 1 hour = 11,830 mg/L
LC_{50} (fathead minnow) 24 hours = 11,160 mg/L
LC_{50} (fathead minnow) 48 hours = 11,130 mg/L
LC_{50} (fathead minnow) 72 hours = 11,130 mg/L
LC_{50} (fathead minnow) 96 hours = 11,130 mg/L
LC_{50} (*Poecilia reticulata* guppy) 7 days = 7,060 mg/L
LC_{50} (*Daphnia magna*) 4,600 mg/L
LC_{100} (creek chub) 24 hours = 1,100 mg/L

OTHER ADVERSE EFFECTS: No component of this product is known to have ozone depletion potential.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the area in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations or with regulations of Canada. This product, if unaltered by handling, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. All gowns, gloves, and disposable materials used in the preparation or handling of this drug should be disposed of in accordance with established hazardous waste disposal procedures. Handle as if capable of transmitting infectious agents. Incineration is recommended. Reusable equipment should be cleaned with soap and water.

U.S. EPA WASTE NUMBER: Wastes of this product may need to be tested per the requirements of RCRA to determine if such wastes meet the following characteristics: D001 (Ignitability).

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION SHIPPING REGULATIONS: This product is classified as hazardous under regulations of U.S. DOT 49 CFR 172.101. When the product meet requirements under 49 CFR § 173.144, and requirements under 49 CFR § 173.150 (b), this product can be shipped as a Consumer Commodity, ORM-D material. Inner packaging cannot exceed 5.0 liters (1.3 gallons), net capacity. Outer packaging cannot exceed 30 kg (66 lb gross weight). See below (Limited Quantity Exceptions) for additional information.

UN Identification Number: Not Applicable

14. TRANSPORTATION INFORMATION (Continued)

U.S. DEPARTMENT OF TRANSPORTATION SHIPPING REGULATIONS (continued):

Proper Shipping Name: Consumer Commodity
Hazard Class Number and Description: ORM-D
Packing Group: Not Applicable
DOT Label(s) Required: None
Emergency Response Guidebook Number (2008): 171

Marine Pollutant: No component of this product is classified by the U.S. DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B).

Limited Quantity Exceptions [49 CFR 173.150(b)]: Limited quantities for Class 3, Packing Group III materials have inner packagings not over 5.0 liters (1.3 gallons) net capacity each, packed in strong outer packaging. The gross weight of the outer package cannot exceed 30 kg (66 lb). Limited quantities are not subject to labeling (unless transported by air) or placarding requirements.

When the product does not meet the requirements for classification of Consumer Quantity and ORM-D, shipments of this product must be classified as follows:

Proper Shipping Name: Flammable liquids, n.o.s. (Isopropyl Alcohol)
Hazard Class Number and Description: 3 (Flammable)
UN Identification Number: UN 1993
Packing Group: III
DOT Label(s) Required: Class 3 (Flammable)
Emergency Response Guidebook Number (2008): 128

Small Quantity Exception (49 CFR 173.4): Small quantities of Class 3 material are not subjected to other requirements of the Hazardous Materials Regulations (Subchapter C) when the maximum quantity per inner receptacle is limited to 30 mL (1 oz). Refer to 49 CFR 173.4 for specific information in packaging small quantity materials.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is classified as Dangerous Goods, per regulations of Transport Canada. The use of the above U.S. DOT information from the U.S. 49 CFR regulations is allowed for shipments that originate in the U.S. For shipments via ground vehicle or rail that originate in Canada, the following information is applicable. This product can be shipped as a Consumer Commodity, under limited quantity exceptions as long as all requirements under Subsections 1.17(2) to (5) are met under the TDG.

UN Identification Number: UN 1993
Proper Shipping Name: Consumer commodity (Isopropyl Alcohol)
Hazard Class Number and Description: Class 3 (Flammable)
Packing Group: Not Applicable
Hazard Label(s) Required: Class 3
Special Provisions: 16
Explosive Limit & Limited Quantity Index: 5
ERAP Index: None
Passenger Carrying Ship Index: None
Passenger Carrying Road or Rail Vehicle Index: 60
Marine Pollutant: No component of this product is listed as a marine pollutant, per Part 2, Section 2.7 of the Consolidated Transportation of Dangerous Goods Regulations.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA REPORTING REQUIREMENTS: The components of this product are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act, as follows:

CHEMICAL NAME	SARA 302 (40 CFR 355, Appendix A)	SARA 304 (40 CFR Table 302.4)	SARA 313 (40 CFR 372.65)
Isopropyl Alcohol (mfg-strong acid process)	No	No	Yes

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for any component of this product. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) therefore applies, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITIES (RQ): Not applicable.

U.S. TSCA INVENTORY STATUS: This product is regulated by the Food and Drug Administration; it is not subject to requirements under TSCA.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): The components of this product are not on the California Proposition 65 lists.

OTHER U.S. FEDERAL REGULATIONS: Regulatory information is available for components of this product as follows:

ISOPROPYL ALCOHOL:

FDA: Isopropyl Alcohol is a food additive permitted for direct addition to food for human consumption, as long as 1) the quantity added to food does not exceed the amount reasonably required to accomplish its intended physical, nutritive, or other technical effect in food, and 2) when intended for use in or on food it is of appropriate food grade and is prepared and handled as a food ingredient. Isopropyl Alcohol may safely used as a diluent in color additive mixtures for marking food supplements in tablet form, gum, and confectionary as long as it leaves no residues.

15. REGULATORY INFORMATION (Continued)

UNITED STATES REGULATIONS (continued):

OTHER U.S. FEDERAL REGULATIONS (continued):

ISOPROPYL ALCOHOL (continued):

FIFRA: Unless designated as an active ingredient (as determined by EPA), Isopropyl Alcohol, when used in antimicrobial products as a solvent (except in tinctures or where sole or major active ingredient) is considered inert, having no independent pesticidal activity. The percentage of such an ingredient shall be included on the label in the total percentage of inert ingredients. Residues of Isopropyl Alcohol are exempted from the requirement of a tolerance when used as a solvent, co-solvent, stabilizer, or inhibitor in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops or to raw agricultural commodities after harvest. Isopropyl Alcohol is exempted from the requirement of a tolerance when used as a solvent, co-solvent, stabilizer, or inhibitor in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops only. Isopropyl Alcohol is exempted from the requirement of a tolerance when used as a solvent or co-solvent in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to animals.

CANADIAN REGULATIONS:

CANADIAN DSL/NDSL INVENTORY STATUS: This product regulated by the Therapeutic Products Programme (TPP) of Health Canada and so it is exempt from requirements of the DSL/NDSL Inventory.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: The components of this product are not on the CEPA Priorities Substances Lists.

CANADIAN WHMIS CLASSIFICATION AND SYMBOLS: The WHMIS Requirements of the Hazardous Products Act does not apply in respect of the advertising, sale or importation of any cosmetic, device, drug or food within the meaning of the Food and Drugs Act.

16. OTHER INFORMATION

ANSI LABELING (Based on 129.1, Provided to Summarize Occupational Exposure Hazards): **WARNING!** FLAMMABLE LIQUID. MAY CAUSE ALLERGIC SKIN REACTION. CAUSES EYE AND RESPIRATORY TRACT IRRITATION. MAY CAUSE SKIN IRRITATION. MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS. Keep away from heat, sparks, and flame. Avoid contact with skin or clothing. Do not breathe vapors. Do not taste or swallow. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Wear gloves, goggles, and appropriate body protection during handling or administration. FIRST-AID: In case of contact, flush eyes with plenty of water. If vapors are inhaled, remove to fresh air. If adverse respiratory reaction occurs from allergic reaction, give oxygen and seek immediate medical attention. If ingested, DO NOT induce vomiting—seek immediate medical attention. IN CASE OF FIRE: Use water fog, dry chemical, CO_2, or "alcohol" foam. IN CASE OF SPILL: Wipe up spilled product. Place residual in appropriate container and seal. Dispose of according to applicable regulations. Consult Material Safety Data Sheet for additional information.

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DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAK Germ Cell Mutagen Categories: 1: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed humans. **2:** Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed mammals. **3A:** Substances that have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. **3B:** Substances that are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but that are clearly mutagenic in vitro and structurally related to known in vivo mutagens. **4:** Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g. purely aneugenic substances] if research results make this seem sensible.) **5:** Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: Group A: A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can lead to damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. **Group B:** Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. **Group C:** There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. **Group D:** Classification in one of the groups A–C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH: Immediately Dangerous to Life and Health. This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

EXPOSURE LIMITS IN AIR (continued):

LOQ: Limit of Quantitation.

MAK: Federal Republic of Germany Maximum Concentration Values in the workplace.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL" is placed next to the PEL that was vacated by Court Order.

SKIN: Used when a there is a danger of cutaneous absorption.

STEL: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV: Threshold Limit Value. An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

WEEL: Workplace Environmental Exposure Limits from the AIHA.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS: This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARD: **0** Minimal Hazard: No significant health risk, irritation of skin or eyes not anticipated. *Skin Irritation*: Essentially non-irritating. Mechanical irritation may occur. PII or Draize = 0. *Eye Irritation*: Essentially non-irritating, minimal effects clearing in < 24 hours. Mechanical irritation may occur. Draize = 0. *Oral Toxicity LD_{50} Rat*: > 5000 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit*: > 2000 mg/kg. *Inhalation Toxicity 4-hrs LC_{50} Rat*: > 20 mg/L.

DEFINITION OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

HEALTH HAZARD (continued): **3 (continued):** *Oral Toxicity LD_{50} Rat*: > 1–50 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit*: > 20–200 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat*: > 0.05–0.5 mg/L. **4** Severe Hazard: Life-threatening; major or permanent damage may result from single or repeated exposures; extremely toxic; irreversible injury may result from brief contact. *Skin Irritation*: Not appropriate. Do not rate as a 4, based on skin irritation alone. *Eye Irritation*: Not appropriate. Do not rate as a 4, based on eye irritation alone. *Oral Toxicity LD_{50} Rat*: ≤ 1 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit*: ≤ 20 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat*: ≤ 0.05 mg/L.

FLAMMABILITY HAZARD: **0** Minimal Hazard: Materials that will not burn in air when exposure to a temperature of 815.5°C (1500°F) for a period of 5 minutes. **1** Slight Hazard: Materials that must be pre-heated before ignition can occur. Material requires considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur. This usually includes the following: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C (200°F) (i.e. OSHA Class IIIB); and Most ordinary combustible materials (e.g. wood, paper, etc.). **2** Moderate Hazard: Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres with air. This usually includes the following: Liquids having a flash-point at or above 37.8°C (100°F); Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres; Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp); and Solids and semisolids (e.g. viscous and slow flowing as asphalt) that readily give off flammable vapors. **3** Serious Hazard: Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions. This usually includes the following: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 38°C (100F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. OSHA Class IB and IC); Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air (e.g., dusts of combustible solids, mists or droplets of flammable liquids); and Materials that burn extremely rapidly, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). **4** Severe Hazard: Life-threatening; major or permanent damage may result from single or repeated exposures; extremely toxic; irreversible injury may result from brief contact. *Skin Irritation*: Not appropriate. Do not rate as a 4, based on skin irritation alone. *Eye Irritation*: Not appropriate. Do not rate as a 4, based on eye irritation alone. *Oral Toxicity LD_{50} Rat*: ≤ 1 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit*: ≤ 20 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat*: ≤ 0.05 mg/L.

FLAMMABILITY HAZARD: **0** Minimal Hazard: Materials that will not burn in air when exposure to a temperature of 815.5°C (1500°F) for a period of 5 minutes. **1** Slight Hazard: Materials that must be pre-heated before ignition can occur. Material requires considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur. This usually includes the following: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C (200°F) (i.e. OSHA Class IIIB); and Most ordinary combustible materials (e.g. wood, paper, etc.). **2** Moderate Hazard: Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres with air. This usually includes the following: Liquids having a flash-point at or above 37.8°C (100°F); Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres; Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp); and Solids and semisolids (e.g. viscous and slow flowing as asphalt) that readily give off flammable vapors. **3** Serious Hazard: Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions. This usually includes the following: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 38°C (100F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. OSHA Class IB and IC); Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air (e.g., dusts of combustible solids, mists or droplets of flammable liquids); and Materials that burn extremely rapidly, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). **4** Severe Hazard: Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and that will burn readily. This usually includes the following: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. OSHA Class IA); and Materials that ignite spontaneously when exposed to air at a temperature of 54.4°C (130°F) or below (pyrophoric).

PHYSICAL HAZARD: **0** *Water Reactivity*: Materials that do not react with water. *Organic Peroxides*: Materials that are normally stable, even under fire conditions and will not react with water. *Explosives*: Substances that are Non-Explosive. *Compressed Gases*: No Rating. *Pyrophorics*: No Rating. *Oxidizers*: No 0 rating. *Unstable Reactives*: Substances that will not polymerize, decompose, condense, or self-react). **1** *Water Reactivity*: Materials that change or decompose upon exposure to moisture. *Organic Peroxides*: Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy violently. *Explosives*: Division 1.5 & 1.6 explosives. Substances that are very insensitive explosives or that do not have a mass explosion hazard. *Compressed Gases*: Pressure below OSHA definition. *Pyrophorics*: No Rating.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

PHYSICAL HAZARD (continued): **1 (continued):** *Oxidizers*: Packaging Group III oxidizers; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. *Unstable Reactives*: Substances that may decompose condense, or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosion hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors. Substances that readily undergo hazardous polymerization in the absence of inhibitors. **2** *Water Reactivity*: Materials that may react violently with water. *Organic Peroxides*: Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. *Explosives*: Division 1.4 explosives. Explosive substances where the explosive effects are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. *Compressed Gases*: Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics*: No Rating. *Oxidizers*: Packing Group II oxidizers. Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. *Reactives*: Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential (or low risk) for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature. **3** *Water Reactivity*: Materials that may form explosive reactions with water. *Organic Peroxides*: Materials that are capable of detonation or explosive reaction, but require a strong initiating source or must be heated under confinement before initiation; or materials that react explosively with water. *Explosives*: Division 1.3 explosives. Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. *Compressed Gases*: Pressure≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics*: No Rating. *Oxidizers*: Packing Group I oxidizers. Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. Liquids: any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture. *Unstable Reactives*: Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a moderate potential (or moderate risk) to cause significant heat generation or explosion. **4** *Water Reactivity*: Materials that react explosively with water without requiring heat or confinement. *Organic Peroxides*: Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. *Explosives*: Division 1.1 & 1.2 explosives. Explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. *Compressed Gases*: No Rating. *Pyrophorics*: Add to the definition of Flammability 4. *Oxidizers*: No 4 rating. *Unstable Reactives*: Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a high potential (or high risk) to cause significant heat generation or explosion.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: **0** Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials. Gases and vapors with an LC_{50} for acute inhalation toxicity greater than 10,000 ppm. Dusts and mists with an LC_{50} for acute inhalation toxicity greater than 200 mg/L. Materials with an LD_{50} for acute dermal toxicity greater than 2000 mg/kg. Materials with an LD_{50} for acute oral toxicity greater than 2000 mg/kg. Materials essentially non-irritating to the respiratory tract, eyes, and skin. **1** Materials that, under emergency conditions, can cause significant irritation. Gases and vapors with an LC_{50} for acute inhalation toxicity greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists with an LC_{50} for acute inhalation toxicity greater than 10 mg/L but less than or equal to 200 mg/L. Materials with an LD_{50} for acute dermal toxicity greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials that slightly to moderately irritate the respiratory tract, eyes and skin. Materials with an LD_{50} for acute oral toxicity greater than 500 mg/kg but less than or equal to 2000 mg/kg. **2** Materials that, under emergency conditions, can cause temporary incapacitation or residual injury. Gases with an LC_{50} for acute inhalation toxicity greater than 3,000 ppm but less than or equal to 5,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 5000 ppm and that does not meet the criteria for either degree of hazard 3 or degree of hazard 4. Dusts and mists with an LC_{50} for acute inhalation toxicity greater than 2 mg/L but less than or equal to 10 mg/L. Materials with an LD_{50} for acute dermal toxicity greater than 200 mg/kg but less than or equal to 1000 mg/kg. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause severe tissue damage, depending on duration of exposure. Materials that are respiratory irritants. Materials that cause severe, but reversible irritation to the eyes or are lachrymators. Materials that are primary skin irritants or sensitizers. Materials whose LD_{50} for acute oral toxicity is greater than 50 mg/kg but less than or equal to 500 mg/kg. **3** Materials that, under emergency conditions, can cause serious or permanent injury. Gases with an LC_{50} for acute inhalation toxicity greater than 1,000 ppm but less than or equal to 3,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Dusts and mists with an LC_{50} for acute inhalation toxicity greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials with an LD_{50} for acute dermal toxicity greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials corrosive to the skin. Cryogenic gases that cause frostbite and irreversible tissue damage. Compressed liquefied gases with boiling points below -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials with an LD_{50} for acute oral toxicity greater than 5 mg/kg but less than or equal to 50 mg/kg.

DEFINITION OF TERMS (Continued)

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

HEALTH HAZARD (continued): **4** Materials that, under emergency conditions, can be lethal. Gases with an LC_{50} for acute inhalation toxicity less than or equal to 1,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than ten times its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 1000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD_{50} for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD_{50} for acute oral toxicity is less than or equal to 5 mg/kg.

FLAMMABILITY HAZARD: **0** Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in according with Annex D of NFPA 704. **1** Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in according with Annex D of NFPA 704. Liquids, solids, and semisolids having a flash point at or above 93.4°C (200°F) (i.e. Class IIIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the *Method of Testing for Sustained Combustibility*, per 49 CFR 173, Appendix H or the UN *Recommendations on the Transport of Dangerous Goods, Model Regulations* (current edition) and the related *Manual of Tests and Criteria* (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85% by weight. Liquids that have no fire point when tested by ASTM D 92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup*, up to the boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Most ordinary combustible materials. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **2** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air. Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (i.e. Class II and Class IIIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures with air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal, and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **3** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions. Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. Class IB and IC liquids). Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **4** Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily. Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. Class IA liquids). Materials that ignite when exposed to air, Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

INSTABILITY HAZARD: **0** Materials that in themselves are normally stable, even under fire conditions. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. **1** Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. **2** Materials that readily undergo violent chemical change at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100W/mL.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

INSTABILITY HAZARD (continued): **3** Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. **4** Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (**NFPA**). Flash Point: Minimum temperature at which a liquid gives off sufficient vapor to form an ignitable mixture with air near the surface of the liquid or within the test vessel used. Autoignition Temperature: Minimum temperature of a solid, liquid, or gas required to initiate or cause self-sustained combustion in air with no other source of ignition. LEL: Lowest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame. UEL: Highest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. LD_{50}: Lethal Dose (solids & liquids) that kills 50% of the exposed animals. LC_{50}: Lethal Concentration (gases) that kills 50% of the exposed animals. ppm: Concentration expressed in parts of material per million parts of air or water. mg/m^3: Concentration expressed in weight of substance per volume of air. mg/kg: Quantity of material, by weight, administered to a test subject, based on their body weight in kg. TDLo: Lowest dose to cause a symptom. TCLo: Lowest concentration to cause a symptom. TDo, LDLo, and LDo, or TC, TCo, LCLo, and LCo: Lowest dose (or concentration) to cause lethal or toxic effects.

Cancer Information: IARC: International Agency for Research on Cancer. NTP: National Toxicology Program. RTECS: Registry of Toxic Effects of Chemical Substances. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information:** BEI: ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

REPRODUCTIVE TOXICITY INFORMATION:

A mutagen is a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generation lines. An embryo toxin is a chemical that causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance that interferes in any way with the reproductive process.

ECOLOGICAL INFORMATION:

EC: Effect concentration in water. BCF: Bioconcentration Factor, which is used to determine if a substance will concentrate in life forms that consume contaminated plant or animal matter. TLm: Median threshold limit. log K_{OW} or log K_{OC}: Coefficient of Oil/Water Distribution is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S.:

EPA: U.S. Environmental Protection Agency. ACGIH: American Conference of Governmental Industrial Hygienists, a professional association that establishes exposure limits. OSHA: U.S. Occupational Safety and Health Administration. NIOSH: National Institute of Occupational Safety and Health, which is the research arm of OSHA. DOT: U.S. Department of Transportation. TC: Transport Canada. SARA: Superfund Amendments and Reauthorization Act. TSCA: U.S. Toxic Substance Control Act. CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act. Marine Pollutant status according to the DOT; CERCLA or Superfund; and various state regulations. This section also includes information on the precautionary warnings that appear on the material's package label.

CANADA:

WHMIS: Canadian Workplace Hazardous Materials Information System. TC: Transport Canada. DSL/NDSL: Canadian Domestic/Non-Domestic Substances List.

REVISION HISTORY

Date	**Changes**
January 31, 2012	Remove comma from company name.
July 7, 2011	Name correction. Update product description in section 2 and section 9. Add revision history section.
December 5, 2011	Company name change correction. Change of heading text, Section 5. Review and up-date of exposure limits to current, Section 8. Change text on Reproductive Toxicity, Section 11. Revision to Definition of Terms. Up-date Section 12. Revise Canadian WHMIS status. Move ANSI Labeling to Section 16. Add revision history section.

SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS Standards, REACH, European Union CLP EC 1272/2008 and the Global Harmonization Standard

PART I *What is the material and what do I need to know in an emergency?*

1. SECTION 1 – IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

TRADE NAME/MATERIAL NAME: Betamethasone Valerate Lotion, USP 0.1%

DESCRIPTION:	Betamethasone Valerate Topical Lotion 0.1%
NDC #:	0168-0057-60
CHEMICAL NAME (for active ingredient):	9-fluoro-11β,17,21-trihydroxy-16β-methylpregna-1,4-diene-3,20-dione 17-Valerate
CHEMICAL FAMILY (for active ingredient):	Synthetic Adrenocorticosteroid
HOW SUPPLIED:	0.1% Betamethasone Valerate Topical Lotion
FORMULA (for active ingredient):	$C_{27}H_{37}FO_6$
RELEVANT USE of the SUBSTANCE:	Pharmaceutical for Human Use
USES ADVISED AGAINST	Other than Relevant Use
SUPPLIER/MANUFACTURER'S NAME:	**FOUGERA PHARMACEUTICALS INC.**
ADDRESS:	60 Baylis Road Melville, NY 11747
BUSINESS PHONE/GENERAL SDS INFORMATION:	1-631-454-7677
EMERGENCY PHONE (U.S./Canada/Puerto Rico):	**1-800-424-9300 (24-hr)**
EMERGENCY PHONE (OUTSIDE U.S.):	**+1-631-454-7677**

ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2010 format. This material has been classified in accordance with the hazard criteria of the CPR and the SDS contains all the information required by the CPR. The material is also classified per all applicable EU Directives through EC 1907: 2006, the European Union CLP EC 1272/2008 and the Global Harmonization Standard.

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION AND EU CLP REGULATION (EC) 1272/2008 LABELING AND CLASSIFICATION: According to Article 1, item 5 (a) of CLP Regulation (EC) 1272/2008, medicinal products in the finished state for human use, as defined in 2001/83/EC, are excepted from classification and other criteria of 1272/2008.

EU LABELING/CLASSIFICATION: According to Article 1 of European Union Council Directive 92/32/EEC, medical products in the finished state for human use (as defined by European Union Council Directives 67/548/EEC and 87/21/EEC) are not subject to the regulations and administrative provisions of European Union Council Directive 92/32/EEC.

EMERGENCY OVERVIEW: Product Description: This product is a slightly turbid, viscous liquid. ***Health Hazards:*** The chief health hazard associated with exposure during normal use and handling is the potential for mild irritation of contaminated skin. Systemic absorption of topical corticosteroids can produce reversible hypothalamic-pituitary-adrenal (HPA) axis suppression with the potential for glucocorticosteroid insufficiency after withdrawal from treatment. Manifestations of Cushing's syndrome, high blood sugar, and excretion of glucose into the urine have been reported. Rarely, immediate hypersensitivity reactions or contact dermatitis may occur from therapeutic use in sensitive individuals. Use can lead to slow wound-healing and a weakened immune system. Long-term use may result in bone density loss. There is limited evidence of harm to the fetus during pregnancy, based on animal data. These effects may be possible as a result of workplace exposure. See Section 11 (Toxicological Information) for information on other potential health hazards known from therapeutic use. ***Flammability Hazards:*** This product is flammable. It is readily ignited under ambient conditions. Vapors from the Isopropyl Alcohol component of this product are heavier than air and may travel to a source of ignition and flashback to a leak or open container. When involved in a fire, this material may decompose and produce irritating vapors and toxic compounds (including carbon oxides, and hydrogen fluoride). ***Reactivity Hazards:*** This product is not reactive. ***Environmental Hazards:*** This product has not been tested for environmental effects. ***Emergency Considerations:*** Emergency responders should wear appropriate protection for situations to which they respond.

3. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	EINECS #	% w/w	**LABEL ELEMENTS** **EU Classification (67/548/EEC)** **GHS & EU Classification (1272/2008 EC)** **Risk Phrases/Hazard Statements**
ACTIVE INGREDIENT				
Betamethasone Valerate 9-fluoro-11β,17,21-trihydroxy-16β-methylpregna-1,4-diene-3,20-dione 17-Valerate	2152-44-5	218-439-5	0.1%	SELF-CLASSIFICATION EU 67/548 Classification: Reproductive Toxicity Cat. 3, Harmful, Irritant Risk Phrase Codes: R63, R38, R33 Hazard Symbols: Xn/xi GHS and EU 1272/2008 Classification: Reproductive Toxicity Cat. 2, Acute Oral Toxicity Cat. 5, Skin Irritation Cat. 2, STOT (Skin, Endocrine System, Bones) RE Cat. 2 Hazard Codes: H361d, H303, H315, H373 Hazard Symbol/Pictogram: GHS07, GHS08

See Section 16 for full classification information of product and components.

3. COMPOSITION and INFORMATION ON INGREDIENTS (Continued)

CHEMICAL NAME	CAS #	EINECS #	% w/w	**LABEL ELEMENTS** **EU Classification (67/548/EEC)** **GHS & EU Classification (1272/2008 EC)** **Risk Phrases/Hazard Statements**
EXCIPIENTS				
Isopropyl Alcohol	67-63-0	200-661-7	Proprietary	SELF-CLASSIFICATION EU 67/548 Classification: Highly Flammable, Irritant Risk Phrase Codes: R11, R36, R67 Hazard Symbols: F, Xi GHS and EU 1272/2008 Classification: Flammable Liquid Cat. 2, Eye Irritation Cat. 2A, STOT (Ingestion/Inhalation-Narcotic Effects) SE Cat. 3 Hazard Codes: H225, H319, H336 Hazard Symbol/Pictogram: GHS02, GHS07
Water and other trace components of less than 1% concentration			Proprietary	EU 67/548: Classification: Not applicable. GHS & EU 1272/2008: Classification: Not applicable.

See Section 16 for full classification information of product and components.

PART II *What should I do if a hazardous situation occurs?*

4 FIRST-AID MEASURES

PROTECTION OF FIRST AID RESPONDERS: rescuers should wear adequate personal protective equipment. Rescuers should be taken for medical attention, if necessary.

DESCRIPTION OF FIRST AID MEASURES: Contaminated individuals must be taken for medical attention if any adverse effects occur. Persons developing hypersensitivity reactions should receive medical attention. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary. Remove victim(s) to fresh air, as quickly as possible. Take copy of product label and SDS to physician or other health professional with victim(s).

Skin Exposure: If adverse skin effects occur, discontinue use. Seek medical attention.

Eye Exposure: If this product contaminates the eyes, rinse eyes under gently running water. Use sufficient force to open eyelids and then "roll" eyes while flushing. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effect continues after rinsing.

Inhalation: If vapors of this product are inhaled, causing irritation, remove victim to fresh air. If necessary, use artificial respiration to support vital functions.

Ingestion: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open airway and obtain immediate medical attention.

IMPORTANT SYMPTOMS AND EFFECTS: See Sections 2 (Hazard Identification) and 11 (Toxicological Information).

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing skin conditions, including skin conditions, hypothalamic-pituitary-adrenal (HPA) axis suppression, Cushing's syndrome, hyperglycemia, and glucosuria may be aggravated. Workplace exposure may also aggravate these conditions. Persons who may have hypersensitivity reactions to this material, or other disorders described in Section 11 (Toxicological Information) may experience aggravation upon exposure.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure. Persons developing hypersensitivity reactions should receive medical attention. No specific antidote is available for this product. Treatment should be symptomatic and supportive. Consideration should be given to the high concentration of Isopropyl Alcohol in this product. If accidentally swallowed, vomiting should be promptly induced or the stomach lavaged with 5% sodium bicarbonate solution. Artificial respiration and atropine may be needed to counteract the symptoms of cholinesterase depletion. Repeat analyses of serum and RBC cholinesterase may assist in establishing the diagnosis and formulating a long-range prognosis.

5. FIRE-FIGHTING MEASURES

FLASH POINT: 16°C (60.8°F) Pensky-Martens Closed Cup

NOTE: The following values have not been determined for the product; values given are for the main flammable component, Isopropyl Alcohol.

AUTOIGNITION TEMPERATURE: 399°C (750°F)

FLAMMABLE LIMITS (in air by volume, %):

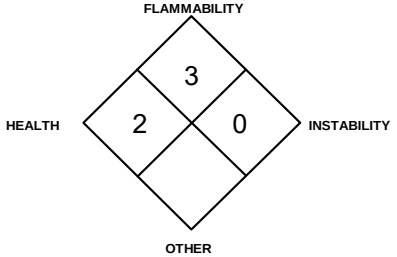
Lower (LEL): 2.0% *Upper (UEL):* 12.7%

FIRE EXTINGUISHING MEDIA: Use extinguishing media appropriate for surrounding fire.

UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

SPECIAL HAZARDS ARISING FROM THE PRODUCT: This product is flammable; it can be readily ignited under ambient conditions. When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., carbon oxides and hydrogen fluoride).

NFPA RATING



Hazard Scale: **0** = Minimal **1** = Slight **2** = Moderate **3** = Serious **4** = Severe

5. FIRE-FIGHTING MEASURES (Continued)

SPECIAL HAZARDS ARISING FROM THE PRODUCT (continued):

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Vapors from product and the liquid may be ignited by static electrical energy.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus (SCBA) and full protective equipment. Chemical resistant clothing may be necessary. If protective equipment is contaminated by this product, it should be thoroughly washed with running water prior to removal of SCBA respiratory protection. Firefighters whose protective equipment becomes contaminated should thoroughly shower with warm, soapy water and should receive medical evaluation if they experience any adverse effects. Move containers from fire area if it can be done without risk to personnel. Water spray can be used to cool fire-exposed containers. Water fog or spray can also be used by trained firefighters to disperse this product's vapors and to protect personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES: Spill kits, clearly labeled, should be kept in or near preparation and administrative areas. It is suggested that kits include a respirator, chemical splash goggles, two pairs of gloves, two sheets (12" x 12") of absorbent material, 250-mL and 1-liter spill control pillows and a small scoop to collect glass fragments (if applicable). Absorbents should be incinerable. Finally, the kit should contain two large waste-disposal bags. Avoid generating aerosols from this product. Spills may be slippery.

PROTECTIVE EQUIPMENT:

Small Spills: Wear goggles and gloves while wiping up small spills of this product with polypad or sponge.

Large Spills: Use proper protective equipment, including double nitrile or appropriate gloves, full body gown, and full-face respirator equipped with a High Efficiency Particulate (HEPA) filter. Self-Contained Breathing Apparatus (SCBA) can be used instead of an air-purifying respirator.

METHODS FOR CLEAN-UP AND CONTAINMENT: Eliminate all sources of ignition before cleanup begins. Use non-sparking tools. Monitor area for combustible vapor levels to determine level of combustible vapors before personnel are allowed into the spill area. The atmosphere must have levels of components lower than those listed in Section 8, (Exposure Controls and Personal Protective Equipment) if applicable, and have at least 19.5 percent oxygen before personnel can be allowed into the area without Self-Contained Breathing Apparatus (SCBA).

Cleanup of Small Spills: The product should be gently covered with absorbent pads. Clean spill with polypad or sponge and dispose of properly. Decontaminate the spill area (three times) using a bleach and detergent solution and then rinse with clean water.

Large Spills: Review Sections 2, 8, 11 and 12 before proceeding with cleanup. Restrict access to the spill areas. For spills of amounts larger than 5 mL limit spread by gently covering with absorbent sheets, or spill-control pads or pillows. Be sure not to generate aerosols. The dispersion of aerosols into surrounding air and the possibility of inhalation is a serious matter and should be treated as such. Do not apply chemical in-activators as they may produce hazardous by-products. Thoroughly clean all contaminated surfaces three times using a bleach and detergent solution and then rinse with clean water.

All Spills: Use procedures described above and then place all spill residues in an appropriate, labeled container and seal. Move to a secure area. Dispose of in accordance with Federal, State, and local hazardous waste disposal regulations (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered product and report spill per regulatory requirements.

ENVIRONMENTAL PRECAUTIONS: Prevent product from entering sewer or confined spaces, waterways, soil or public waters. Do not flush to sewer. For spills on water, contain, minimize dispersion and collect.

REFERENCE TO OTHER SECTIONS: Review Sections 2, 8, 11 and 12 before proceeding with cleanup. See Section 13, Disposal Considerations for more information.

PART III *How can I prevent hazardous situations from occurring?*

7. HANDLING and USE

PRECAUTIONS FOR SAFE HANDLING: All employees who handle this product should be thoroughly trained to handle it safely. As with all chemicals, avoid getting this product ON YOU or IN YOU. Do not eat or drink while handling this product. Appropriate personal protective equipment must be worn (see Section 8, Engineering Controls and Personal Protection). Avoid generation of aerosols.

PRODUCT PREPARATION INSTRUCTIONS FOR MEDICAL PERSONNEL: Handle this material following standard medical practices and following the recommendations presented on the Package Insert.

CONDITIONS FOR SAFE STORAGE: Containers of this product must be properly labeled. Store containers in a cool, dry location, away from direct sunlight and sources of intense heat. Recommended Storage Temperature: 20-25°C (68-77°F) [USP Controlled Room Temperature]. Protect from freezing. Store away from incompatible materials (see Section 10, Stability and Reactivity). Product should be stored in secondary containers. Keep containers tightly closed when not in use. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the storage area (e.g., sprinkler system, portable fire extinguishers). Empty containers may contain residual product; therefore, empty containers should be handled with care and disposed of properly. Storage areas should be made of fire resistant materials.

7. HANDLING and USE (Continued)

CONDITIONS FOR SAFE STORAGE (continued): Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Have appropriate extinguishing equipment in the storage area (i.e., sprinkler system, portable fire extinguishers). Empty packages may contain residual liquid or vapors that are flammable; therefore, empty packages should be handled with care. Refer to NFPA 30, *Flammable and Combustible Liquids Code*, for additional information on storage.

PRODUCT PREPARATION INSTRUCTIONS FOR MEDICAL PERSONNEL: Handle this material following standard medical practices and following the recommendations presented on the Package Insert.

SPECIFIC USE(S): This product is a human pharmaceutical. Follow all industry standards for use of this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: When cleaning non-disposable equipment, wear latex or butyl rubber (double gloving is recommended), goggles, and lab coat. Wash equipment with soap and water. Wipe equipment down with damp sponge or polypad. Collect all rinsates and dispose of according to applicable U.S. Federal, State, and local hazardous waste disposal regulations or waste disposal regulations of Canada. All disposable items contaminated with this product should be disposed of properly.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls*:* Use with adequate ventilation. Non-sparking ventilation should be used. Follow standard medical product handling procedures. During decontamination of work surfaces, workers should wear the same equipment recommended in Section 6 (Accidental Release Measures) of this SDS.

Workplace Exposure Limits/Control Parameters:

CHEMICAL NAME	*CAS #*	*EXPOSURE LIMITS IN AIR*							
		ACGIH-TLVs		*OSHA-PELs*		*NIOSH-RELs*		*NIOSH*	*OTHER*
		TWA ppm	*STEL ppm*	*TWA ppm*	*STEL ppm*	*TWA ppm*	*STEL ppm*	*IDLH ppm*	*ppm*
Betamethasone Valerate	2152-44-5	NE	NE	NE	NE	NE	NE	NE	NE
Isopropyl Alcohol	67-63-0	200	400	400	500 (vacated 1989 PEL)	400	500	2000 (based on 10% of LEL)	DFG MAKs: TWA = 200 PEAK = 2•MAK 15 min. average value, 1-hr interval, 4 per shift DFG MAK Pregnancy Risk Classification: D Carcinogen: IARC-3, TLV-A4

NE = Not Established See Section 16 for Definitions of Terms Used.

International Occupational Exposure Limits: Exposure limits available for some excipient components are given below.

ISOPROPYL ALCOHOL:
Australia: TWA = 400 ppm (983 mg/m^3), STEL = 500 ppm (1230 mg/m^3), JUL 2008
Austria: MAK-TMW 200 ppm (500 mg/m^3); KZW = 800 ppm (2000 mg/m^3), 2007
Belgium: TWA =400 ppm (997 mg/m^3), MAR 2002
Belgium: STEL = 500 ppm (1248 mg/m^3), MAR 2002
Denmark: TWA = 200 ppm (490 mg/m^3), MAY 2011
France: VLE = 400 ppm (980 mg/m^3), FEB 2006
Germany: MAK = 500 mg/m^3 (200 mL/m^3), 2005
Hungary: TWA = 500 mg/m^3, STEL = 2000 mg/m^3, Skin, SEP 2000
Iceland: TWA = 200 ppm (490 mg/m^3), skin, NOV 2011
Japan: OEL-C = 400 ppm (980 mg/m^3), MAY 2009
Korea: TWA = 400 ppm (980 mg/m^3), STEL = 500 ppm (1225 mg/m^3), 2006
Mexico: TWA = 400 ppm (980 mg/m^3); STEL = 500 ppm (1225 mg/m^3), 2004
The Netherlands: MAC-TGG = 650 mg/m^3, 2003

ISOPROPYL ALCOHOL (continued):
New Zealand: TWA = 400 ppm (983 mg/m^3); STEL = 500 ppm (1230 mg/m^3), JAN 2002
Peru: TWA = 200 ppm (491 mg/m^3); STEL = 400 ppm (983 mg/m^3), JUL 2005
The Philippines: TWA = 400 ppm (980 mg/m^3), JAN 1993
Poland: MAC(TWA) = 900 mg/m^3, MAC(STEL) = 1200 mg/m^3, JAN 1999
Russia: TWA = 10 mg/m^3, STEL = 50 mg/m^3, JUN 2003
Sweden: TWA = 150 ppm (350 mg/m^3); STEL = 250 ppm (600 mg/m^3), JUN 2005
Switzerland: MAK-W = 200 ppm (500 mg/m^3), KZG-W = 400 ppm (1000 mg/m^3), DEC 2006
Turkey: TWA = 200 ppm (500 mg/m^3), JAN 1993
United Kingdom: TWA = 400 ppm (999 mg/m^3); STEL = 500 ppm (1250 mg/m^3), OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

PROTECTIVE EQUIPMENT: *The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including* U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hand Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR1910.132)*, equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02,* Z94.3-M1982, *Industrial Eye and Face Protectors and* CSA Standard Z195-02, *Protective Footwear), or standards of EU member states (including EN 529:2005 for respiratory PPE, CEN/TR 15419:2006 for hand protection, and CR 13464:1999 for face/eye protection). Please reference applicable regulations and standards for relevant details.*

Respiratory Protection: Maintain airborne contaminant concentrations below exposure limits listed above, if applicable. For materials without listed exposure limits, minimize respiratory exposure. If necessary, use only respiratory protection authorized under appropriate regulations. Oxygen levels below 19.5% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under U.S. OSHA's Respiratory Protection Standard (1910.134-1998). The following are NIOSH respiratory protection guidelines for the Isopropyl Alcohol component and are being provided to assist in selection respiratory equipment, should it be needed.

ISOPROPANOL

CONCENTRATION	RESPIRATORY PROTECTION
Up to 2000 ppm:	Any Supplied-Air Respirator (SAR) operated in a continuous-flow mode, or any Chemical Cartridge Respirator with a full facepiece and organic vapor cartridge(s), or any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister, or any Powered, Air-Purifying Respirator (PAPR) with organic vapor cartridge(s), or any Self-Contained Breathing Apparatus (SCBA) with a full facepiece, or any SAR with a full facepiece.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

PROTECTIVE EQUIPMENT (continued):

Respiratory Protection (continued):

ISOPROPANOL

CONCENTRATION	RESPIRATORY PROTECTION
Emergency or Planned	Entry into Unknown Concentrations or IDLH Conditions: Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive-pressure mode.
Escape:	Any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister, or any appropriate escape-type, SCBA.

Eye Protection: Wear splash goggles or safety glasses as appropriate for the task. If necessary, refer to appropriate regulations.

Hand Protection: Wash hands and wrists before putting on and after removing gloves. During manufacture or other similar industrial operations, wear the appropriate hand protection for the process. When used in medical administration of the product, double glove with nitrile or other appropriate gloves to avoid contact and/or absorption of the product. Use double gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. Because all gloves are to some extent permeable and their permeability increases with time, they should be changed regularly (hourly is preferable) or immediately if torn or punctured. If necessary refer to appropriate regulations.

Skin Protection: Use appropriate protective clothing for the task (e.g., lab coat, etc.). If necessary, refer to the U.S. OSHA Technical Manual (Section VII: Personal Protective Equipment) or other appropriate regulations.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Viscous liquid.
COLOR: Slightly turbid.
MOLECULAR WEIGHT: Mixture.
MOLECULAR FORMULA: Mixture.
ODOR: Isopropyl alcohol odor.
pH: 4-6 (10% in water)
ODOR THRESHOLD: For Isopropyl Alcohol: Geometric mean: 43 ppm (detection); 19 ppm (recognition)
BOILING POINT: 80-85°C (176-185°F)
FREEZING/MELTING POINT: 40-50°C (100-122°F)
EVAPORATION RATE (nBuAc = 1): 0.02
SOLUBILITY IN WATER: Soluble.
VAPOR PRESSURE (air = 1): Not established.
SPECIFIC GRAVITY @ 25°C (water = 1): < 1
COEFFICIENT WATER/OIL DISTRIBUTION: Not established.
FLASH POINT: 16°C (60.8°F) Pensky-Martens Closed Cup
HOW TO DETECT THIS SUBSTANCE (warning properties): The appearance of this product can be a distinguishing characteristic to identify it in event of accidental release.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: This product is stable.
DECOMPOSITION PRODUCTS: ***Combustion:*** If exposed to extremely high temperatures, thermal decomposition may generate irritating fumes and toxic gases (e.g., carbon oxides and hydrogen fluoride). ***Hydrolysis:*** None known.
MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product is generally compatible with other common materials in a medical facility. Acids, strong oxidizers, water reactive materials, and other chemicals that could affect its performance should be avoided. Due to the high percentage of Isopropyl Alcohol, this product would be incompatible with the following compounds: strong oxidizing agents (e.g. chromium trioxide, chlorine oxides, nitrosyl perchlorate, nitric acid and permanganates), strong acids, alkali metals, aluminum, crotonaldehyde, potassium t-butoxide and trinitromethane.
POSSIBILITY OF HAZARDOUS REACTIONS/POLYMERIZATION: Will not occur.
CONDITIONS TO AVOID: Avoid heat and contact with incompatible chemicals.

PART IV *Is there any other useful information about this material?*

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The health hazard information provided below is pertinent to medical employees handling this product in an occupational setting. The following paragraphs describe the symptoms of exposure by route of exposure.

Inhalation: Inhalation of vapors of this product, especially in a poorly ventilated space, may cause flushing, decreased pulse rate, drop in blood pressure, numbness, narcosis, headache, dizziness, mental depression, hallucinations, distorted perception, difficulty breathing, respiratory depression, nausea, vomiting, and coma. In persons susceptible to corticosteroids, inhalation can cause bronchospasm, with an immediate increase in wheezing. Glaucoma, increased intraocular pressure, and cataracts have been reported following the long-term administration of inhaled corticosteroids.

Contact with Skin or Eyes: Prolonged skin contact may cause dermatitis (dry, red, cracked skin), thinning of skin and suppression of adrenal cortex (decreased ability to respond to stress) and increased susceptibility to bacterial and fungal infections. Corticosteroids (such as Betamethasone Valerate) may cause allergic contact dermatitis. This is usually diagnosed by observing a failure to heal rather than a clinical exacerbation. Eye contact can cause irritation, stinging, redness, and tearing.

Skin Absorption: This product is designed to be absorbed into the skin. Symptoms of chronic overexposure by this route may include reversible hypothalamic-pituitaryadrenal (HPA) axis suppression, abnormal accumulations of facial and trunk fat, fatigue, high blood pressure, osteoporosis, abnormally high level of glucose in the blood, and abnormally high levels of glucose in the urine.

11. TOXICOLOGICAL INFORMATION (Continued)

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE (continued):

Ingestion: Ingestion of this product is not anticipated to be a significant route of occupational exposure. Ingestion of this product (i.e., through poor hygiene practices) may be harmful or irritate the mouth, throat, and other tissues of the gastrointestinal system. Chronic ingestion can also cause reduction in bone density, immune and adrenal system suppression, and Candida infections.

Injection: Though not anticipated to be a significant route of exposure for this product, injection (via punctures or lacerations by contaminated objects) may cause redness at the site of injection.

OTHER HEALTH EFFECTS-Therapeutic Use: In therapeutic use, the most common adverse effect reported has been application site burning and itching. As a corticosteroid, allergic contact dermatitis can occur, as determined by a failure to heal. Skin infections including fungal infections can occur. Prolonged or chronic use can lead to increased susceptibility to infections, including the flu, nasopharyngitis, strep, and upper respiratory tract infections. Systemic skin absorption of topical corticosteroids has produced hypothalamic-pituitary-adrenal (HPA) axis suppression manifestations of Cushing's syndrome, high blood sugar, and glucose in the urine. Limited evidence of harm to fetus during pregnancy, based on animal data. Breastfeeding during therapeutic use may cause harm to breastfed babies.

IRRITANCY OF PRODUCT: Prolonged skin may irritate contaminated tissue. Prolonged skin contact may cause dermatitis and defatting of skin due to Ethanol content.

SENSITIZATION OF PRODUCT: Rare instances of anaphylactoid reactions have occurred in persons receiving corticosteroid therapy.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD	(BLUE)	2*
FLAMMABILITY HAZARD	(RED)	3
PHYSICAL HAZARD	(YELLOW)	0

PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8

For Routine Industrial Use and Handling Applications

Hazard Scale: **0** = Minimal **1** = Slight **2** = Moderate
3 = Serious **4** = Severe * = Chronic hazard

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Exposure to this product may cause the following health effects:

Acute: This product may cause irritation via inhalation or eye contact. Ingestion may be harmful.

Chronic: Repeated skin contact may cause dermatitis (dry, red skin). Chronic exposure may cause symptoms as described under 'Other Potential Health Effects'.

TARGET ORGANS:

Acute: *Occupational Exposure:* Skin. *Therapeutic Doses:* Skin.

Chronic: *Occupational Exposure:* Skin. *Therapeutic Doses:* Skin, adrenal system, metabolic system, possible fetal harm and mutagenic potential.

TOXICITY DATA: Only toxicity data available for the active component of this product are presented in this SDS. Additional data are available for the excipient components of this product, but are not presented in this SDS; Contact Fougera for more information.

BETAMETHASONE VALERATE:

LD_{50} (Oral-rat) > 3 g/kg; Skin and Appendages: hair
LD_{50} (Oral-mouse) 4067 mg/kg
LD_{50} (Intraperitoneal-rat) > 4500 mg/kg; Skin and Appendages: hair
LD_{50} (Intraperitoneal-mouse) 632 mg/kg
LDLo (Subcutaneous-rat) 2 g/kg
LD_{50} (Subcutaneous-mouse) 496 mg/kg
LD_{50} (Subcutaneous-rabbit) 61200 µg/kg; Eye: lacrymation; Gastrointestinal: hypermotility, diarrhea
TDLo (skin-rat) 87500 mg/kg/35 days-intermittent: Endocrine: changes in thymus weight; Blood: changes in leukocyte (WBC) count; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: transaminases
TDLo (ski-rat) 9 mg/kg/30 days-intermittent: Blood; changes in bone marrow (not otherwise specified); Nutritional and Gross Metabolic: weight loss or decreased weight gain; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: transaminases
TDLo (skin-rat) 18 mg/kg/26 weeks-intermittent: Cardiac: changes in heart weight; Liver: changes in liver weight; Blood: changes in leukocyte (WBC) count
TDLo (skin-rat) 42 mg/kg/5 weeks-intermittent: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol), changes in leukocyte (WBC) count; Nutritional and Gross Metabolic: weight loss or decreased weight gain
TDLo (skin-rat) 19,800 µg/kg/female 7–17 days after conception; Reproductive: Maternal Effects: parturition; Effects on Fetus: fetotoxicity (except death, e.g., stunted fetus), fetal death
TDLo (skin-rat) 19800 µg/kg/female 7–17 days after conception; Reproductive: Effects on Newborn: stillbirth, live birth index (measured after birth), sex ratio
TDLo (skin-rat) 19800 µg/kg/female 7–17 days after conception; Reproductive: Specific Developmental Abnormalities: musculoskeletal system
TDLo (skin-dog) 91 mg/kg/91 days/intermediate; Kidney, Ureter, Bladder: urine volume increased; Endocrine: changes in adrenal & thymus weight
TDLo (skin-rabbit) 7500 µg/kg/female 7–18 days after conception; Reproductive: Fertility: abortion; Effects on Fetus: fetal death; Effects on Newborn: stillbirth
TDLo (skin-rabbit) 1500 µg/kg/female 7–18 days after conception; Reproductive: Effects on Fetus: fetotoxicity (except death, e.g., stunted fetus)

BETAMETHASONE VALERATE (continued):

TDLo (Subcutaneous-rat) 3500 µg/kg/35 days/intermediate; Liver: changes in liver weight; Endocrine: changes in adrenal weight; Blood: changes in leukocyte (WBC) count
TDLo (Subcutaneous-rat) 44 mg/kg/female 7–17 days after conception; Reproductive: Maternal Effects: uterus, cervix, vagina; Fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants); Effects on Fetus: fetal death
TDLo (Subcutaneous-rat) 175 mg/kg/35 days/intermediate; Nutritional and Gross Metabolic: weight loss or decreased weight gain; Related to Chronic Data: death
TDLo (Subcutaneous-rat) 12 mg/kg/30 days/intermediate; Endocrine: changes in spleen weight; Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Related to Chronic Data: changes in uterine weight
TDLo (Subcutaneous-rat) 1100 µg/kg/female 7–17 days after conception; Reproductive: Effects on Fetus: fetotoxicity (except death, e.g., stunted fetus); Reproductive: Specific Developmental Abnormalities: musculoskeletal system
TDLo (Subcutaneous-rat) 44 mg/kg/female 7–17 days after conception; Reproductive: Specific Developmental Abnormalities: craniofacial (including nose and tongue), body wall
TDLo (Subcutaneous-mouse) 1 mg/kg/female 11 days after conception; Reproductive: Effects on Fetus: fetotoxicity (except death, e.g., stunted fetus)
TDLo (Subcutaneous - mouse) 1 mg/kg/female 14 days after conception; Reproductive: Effects on Fetus: fetal death
TDLo (Subcutaneous-mouse) 3300 µg/kg/female 12 days after conception; Reproductive: Specific Developmental Abnormalities: craniofacial (including nose and tongue)
TDLo (Subcutaneous-rabbit) 1300 µg/kg/female 6–18 days after conception; Reproductive: Maternal Effects: uterus, cervix, vagina; Fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants); Effects on Fetus: fetotoxicity (except death, e.g., stunted fetus)
TDLo (Subcutaneous-rabbit) 1300 µg/kg/female 6–18 days after conception; Reproductive: Effects on Fetus: fetal death; Specific Developmental Abnormalities: Central Nervous System, eye/ear
TDLo (Subcutaneous-rabbit) 1300 µg/kg/female 6–18 days after conception; Reproductive: Specific Developmental Abnormalities: craniofacial (including nose and tongue), body wall, musculoskeletal system

11. TOXICOLOGICAL INFORMATION (Continued)

CARCINOGENIC INFORMATION: The following information is available for the active ingredient.

Long-term animal studies have not been performed to evaluate the carcinogenic potential of topical corticosteroids or the active ingredient, Betamethasone Valerate.

Excipient components of this product are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows:

ISOPROPYL ALCOHOL: IARC-3 (Not Classifiable as to Carcinogenicity to Humans); ACGIH-TLV-A4 (Not Classifiable as a Human Carcinogen)

The remaining components of this product are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, or ACGIH and therefore are neither considered to be nor suspected to be cancer-causing agents by these agencies.

REPRODUCTIVE TOXICITY INFORMATION: There are no adequate and well-controlled studies of this product in pregnant women; however, this product may cause fetal harm when administered to a pregnant woman. In the workplace, the risk to the fetus should be communicated and the appropriate action should be taken to prevent exposure in accordance with company policy and regulatory requirements. This product is rated by the FDA for therapeutic risk as Pregnancy Risk Category C (Animal reproduction studies have shown an adverse effect on the fetus and there are no adequate and well-controlled studies in humans, but potential benefits may warrant use of the drug in pregnant women despite potential risks).

Mutagenicity: Studies to determine mutagenicity with prednisolone and hydrocortisone have revealed negative results.

Embryotoxicity/Teratogenicity: Corticosteroids have been shown to be teratogenic in laboratory animals when administered systemically at relatively low dosage levels. Some corticosteroids have been shown to be teratogenic after dermal application in laboratory animals.

Reproductive Toxicity: No fertility studies available. It is not known whether topical administration of corticosteroids could result in sufficient systemic absorption to produce detectable quantities in breast milk. Systemically administered corticosteroids are secreted into breast milk in quantities not likely to have a deleterious effect on the infant. Nevertheless, caution should be exercised when topical corticosteroids are prescribed for a nursing woman.

Non-Teratogenic Effects: Hypoadrenalism may occur in infants born of mothers receiving corticosteroids during pregnancy.

ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, ACGIH Biological Exposure Indices (BEIs) have been determined for components of this product.

CHEMICAL: DETERMINANT	SAMPLING TIME	BEI
Isopropyl Alcohol • Acetone in urine	• End of Shift End of Workweek	• 40 mg/L

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: This product has not been tested for soil absorption or mobility.

ISOPROPYL ALCOHOL: The Koc of Isopropanol is estimated as 25, using a measured log Kow of 0.05 and a regression-derived equation. According to a classification scheme, this estimated Koc value suggests that Isopropanol is expected to have very high mobility in soil.

PERSISTENCE AND BIODEGRADABILITY: This product has not been tested for persistence or biodegradability. The following information is available for the components of this product:

ISOPROPYL ALCOHOL: Based on a classification scheme, an estimated Koc value of 25, determined from a log Kow of 0.05 and a regression-derived equation, indicates that Isopropanol is expected to have very high mobility in soil. Volatilization of Isopropanol from moist soil surfaces is expected to be an important fate process given a Henry's Law constant of 8.10X10-6 atm-cu m/mole. The potential for volatilization of Isopropanol from dry soil surfaces may exist based upon a vapor pressure of 45.4 mmHg. Isopropanol is readily degraded in aerobic systems; the range of half-lives for aerobic degradation using a sewage sludge inoculum are < 1 day to 48 days. Isopropanol has also been shown to be readily degraded under anaerobic conditions. Volatilization from water surfaces is expected based upon a Henry's Law constant of 8.10X10-6 atm-cu m/mole. Using this Henry's Law constant and an estimation method, volatilization half-lives for a model river and model lake are 57 hours and 29 days, respectively. Isopropanol is readily degraded in aerobic systems; the range of half-lives for aerobic degradation using a sewage sludge inoculum are < 1 day to 48 days. Isopropanol has also been shown to be readily degraded under anaerobic conditions. According to a model of gas/particle partitioning of semi-volatile organic compounds in the atmosphere, Isopropanol, which has a vapor pressure of 45.4 mm Hg at 25°C, is expected to exist solely as a vapor in the ambient atmosphere. Vapor-phase Isopropanol is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 3.2 days, calculated from its rate constant of 5.07X10-12 cu cm/molecule-sec at 25°C.

BIOACCUMULATION: This product has not been tested for bioconcentration. The following information is available for the components of this product:

ISOPROPYL ALCOHOL: An estimated BCF of 3 was calculated for Isopropanol, using a log Kow of 0.05 and a regression-derived equation. According to a classification scheme, this BCF suggests the potential for bioconcentration in aquatic organisms is low.

ECOTOXICITY: No specific information is currently available on the effect of this product on plants or animals in the environment. This product may be harmful to contaminated terrestrial and aquatic plant and animal life, especially in large quantities. The following are aquatic toxicity data currently available for components of this product. Only select data are presented in this SDS. Contact Fougera for more information.

ISOPROPYL ALCOHOL:

EC_{50} (*Photobacterium*) 5 minutes = 22,800 mg/L
EC_{50} (*Daphnia magna*) 3,010 mg/L
EC_{50} (*Pseudomonas putida*) 16 hours = 1,050 mg/L
LC_{50} (*Artemia salina*) 24 hours = 16,700 mg/L
LC_{50} (*Streptocephalus proboscideus*) 24 hours = 11,600 mg/L
LC_{50} (*Daphnia magna*) 24 hours = 9,500 mg/L

ISOPROPYL ALCOHOL (continued):

LC_{50} (*Brachionus calyciflorus*) 24 hours = 28,600 mg/L
LC_{50} (*Crangon crangon* brown shrimp) 98 hours = 1,150 mg/L
LC_{50} (goldfish) 24 hours = > 500 mg/L
LC_{50} (fathead minnow) 72-96 hours = 11,130 mg/L
LC_{50} (*Poecilia reticulata* guppy) 7 days = 7,060 mg/L
LC_{50} (*Daphnia magna*) 4,600 mg/L

RESULTS OF PBT AND vPvB ASSESSMENT: No Data Available. PBT and vPvB assessments are part of the chemical safety report required for some substances in European Union Regulation (EC) 1907/2006, Article 14.

12. ECOLOGICAL INFORMATION (Continued)

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

OTHER ADVERSE EFFECTS: No component of this product is known to have ozone depletion potential.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the area in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

PREPARING WASTES FOR DISPOSAL: This product, if unaltered by handling, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. All gowns, gloves, and disposable materials used in the preparation or handling of this drug should be disposed of in accordance with established hazardous waste disposal procedures. Handle as if capable of transmitting infectious agents. Incineration is recommended. Reusable equipment should be cleaned with soap and water.

U.S. EPA WASTE NUMBER: Wastes of this product may need to be tested per the requirements of RCRA to determine if such wastes meet the following characteristics: D001 (Ignitability).

EWC WASTE CODE: Wastes from Human or Animal Health Care or Related Research: 18 01 08: Medicines Other Than Those Mentioned in 18 01 07.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION SHIPPING REGULATIONS: This product is classified as hazardous under regulations of U.S. DOT 49 CFR 172.101. When the product meet limited quantity requirements under 49 CFR § 173.144, and requirements under 49 CFR § 173.150 (b), this product can be shipped as an ORM-D material, Consumer Commodity). See below for additional information on Consumer Commodity, Small Quantities and Limited Quantities.

UN Identification Number:	Not Applicable
Hazard Class Number and Description:	ORM-D
Proper Shipping Name:	Consumer Commodity
Packing Group:	Not Applicable
DOT Label(s) Required:	None
Emergency Response Guidebook Number (2012):	171

Marine Pollutant: No component of this product is classified by the U.S. DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B).

Shipments of this product can qualify for specific exceptions, as follows (see definitions below):

Shipments under 30 g (1 ounce): Such shipments qualify for the small quantity exception (per 49 CFR 173.4). These shipments must be properly marked and packaged, per 49 CFR 173.4.

Shipments of not more than 1 kg (2.2 pounds): Such shipments qualify for limited quantity exception. These shipments must be properly marked and packaged, per 49 CFR 173.151.

When the product does not meet the requirements for classification of Consumer Quantity and ORM-D, shipments of this product must be classified as follows:

UN Identification Number:	UN 1993
Proper Shipping Name:	Flammable liquids, n.o.s. (Isopropyl Alcohol)
Hazard Class Number and Description:	3 (Flammable)
Packing Group:	III
Dot Label(s) Required:	Class 3 (Flammable)
Emergency Response Guidebook Number (2013):	128

Consumer Commodities [49 CFR § 173.185]: Until December 31, 2020, a limited quantity package containing a “consumer commodity” as defined in §171.8 of this subchapter, may be renamed “Consumer commodity” and re-classed as ORM-D for ground shipments. All requirements under 49 CFR 173.167 must be met.

Small Quantity Exception (49 CFR 173.4): Small quantities of Class 3 material are not subjected to other requirements of the Hazardous Materials Regulations (Subchapter C) when the maximum quantity per inner receptacle is limited to 30 mL (1 oz). Refer to 49 CFR 173.4 for specific information in packaging small quantity materials.

Limited Quantity Exceptions [49 CFR 173.151 (b)]: For flammable liquids in Packing Group III, inner packagings not over 5.0 L (1.3 gallons) net capacity each, packed in a strong outer packaging.

14. TRANSPORTATION INFORMATION (Continued)

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is classified as Dangerous Goods, per regulations of Transport Canada. The use of the above U.S. DOT information from the U.S. 49 CFR regulations is allowed for shipments that originate in the U.S. For shipments via ground vehicle or rail that originate in Canada, the following information is applicable.

UN Identification Number:	UN 1993
Proper Shipping Name:	Flammable liquid, n.o.s. (Isopropyl Alcohol)
Hazard Class Number and Description:	Class 3 (Flammable)
Packing Group:	III
Hazard Label(s) Required:	Class 3
Special Provisions:	16
Explosive Limit & Limited Quantity Index:	5
ERAP Index:	None
Passenger Carrying Ship Index:	None
Passenger Carrying Road or Rail Vehicle Index:	60

Marine Pollutant: No component of this product is listed as a marine pollutant, per Part 2, Section 2.7 of the Consolidated Transportation of Dangerous Goods Regulations.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA): This product is classified as Dangerous Goods, by rules of IATA:

UN Identification Number:	UN 1993
Proper Shipping Name:	Flammable liquid, n.o.s. (Isopropyl Alcohol)
Hazard Class Number and Description:	3 (Flammable)
Hazard Label(S) Required:	Class 3 (Flammable)
Packing Group:	III
Excepted Quantities:	EQ1
Passenger and Cargo Aircraft Packing Instruction:	355
Passenger and Cargo Aircraft Maximum Net Quantity per Pkg.:	60 L
Passenger and Cargo Aircraft Limited Quantity Packing Instruction:	Y344
Passenger and Cargo Aircraft Limited Quantity Maximum Net Quantity per Pkg.:	10 L
Cargo Aircraft Only Packing Instruction:	366
Cargo Aircraft Only Maximum Net Quantity per Pkg.:	220 L
Special Provisions:	A3, A58, A180
ERG Code:	3L

NOTE: This product, when shipped in Limited Quantity can be reclassified as Consumer Commodity. Refer to IATA shipping requirements for full information.

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION: This product is classified as Dangerous Goods by the International Maritime Organization.

UN Identification Number:	UN 1993
Proper Shipping Name:	Flammable liquid, n.o.s. (Isopropyl Alcohol)
Hazard Class Number and Description:	3 (Flammable)
Packing Group:	III
Special Provisions:	223, 274, 955
Hazard Label(s) Required:	Class 3 (Flammable)
Limited Quantities:	5 L
Excepted Quantities:	EQ1
Packing:	Instructions: P001; Provisions: LP01
IBCs:	Instructions: IBC03; Provisions: None
Tanks:	Instructions: T4; Provisions: TP1, TP29
EmS:	F-E, S-E
Stowage and Segregation:	Category A

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): This product is considered by the United Nations Economic Commission for Europe to be dangerous goods.

UN Number:	UN 1993
Name and Description:	Flammable liquid, n.o.s. (Isopropyl Alcohol)
Class:	3
Classification Code:	F1
Packing Group:	III
Label(s):	3
Special Provisions:	274, 601, 640E
Limited Quantities:	1 liter
Excepted Quantities:	EQ1
Packing Instructions:	P001, IBC03, LP01, R001
Portable Tanks and Bulk Containers:	Instructions: T4, Provisions: TP1, TP29
Mixed Packing Instructions:	MP19
Hazard Identification Number:	30

NOTE: This product, when shipped in Limited Quantity can be reclassified as Consumer Commodity. Under Special Provision 601, Pharmaceutical products (medicines) ready for use, which are substances manufactured and packaged for retail sale for personal or household consumption are not subject to the requirements of the ADR. All provisions under SP-601 must be met.

14. TRANSPORTATION INFORMATION (Continued)

TRANSPORT IN BULK ACCORDING TO THE IBC CODE: See the information under the individual jurisdiction listings for IBC information.

ENVIRONMENTAL HAZARDS: This product does not meet the criteria of environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN); components of this product are not specifically listed in Annex III under MARPOL 73/78.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: The components of this product are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act, as follows:

CHEMICAL NAME	SARA 302 (40 CFR 355, Appendix A)	SARA 304 (40 CFR Table 302.4)	SARA 313 (40 CFR 372.65)
Isopropyl Alcohol (mfg-strong acid process)	No	No	Yes

U.S. SARA Threshold Planning Quantity (TPQ): There are no specific Threshold Planning Quantities for any component of this product. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) therefore applies, per 40 CFR 370.20.

U.S. CERCLA Reportable Quantities (RQ): Not applicable.

U.S. TSCA Inventory Status: This product is regulated by the Food and Drug Administration; it is not subject to requirements under TSCA.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): No component is on the California Proposition 65 Lists.

Other U.S. Federal Regulations: Regulatory information is available for components of this product as follows:

ISOPROPYL ALCOHOL:

FDA: Isopropyl Alcohol is a food additive permitted for direct addition to food for human consumption, as long as 1) the quantity added to food does not exceed the amount reasonably required to accomplish its intended physical, nutritive, or other technical effect in food, and 2) when intended for use in or on food it is of appropriate food grade and is prepared and handled as a food ingredient. Isopropyl Alcohol may safely used as a diluent in color additive mixtures for marking food supplements in tablet form, gum, and confectionary as long as it leaves no residues.

FIFRA: Unless designated as an active ingredient (as determined by EPA), Isopropyl Alcohol, when used in antimicrobial products as a solvent (except in tinctures or where sole or major active ingredient) is considered inert, having no independent pesticidal activity. The percentage of such an ingredient shall be included on the label in the total percentage of inert ingredients. Residues of Isopropyl Alcohol are exempted from the requirement of a tolerance when used as a solvent, co-solvent, stabilizer, or inhibitor in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops or to raw agricultural commodities after harvest. Isopropyl Alcohol is exempted from the requirement of a tolerance when used as a solvent, co-solvent, stabilizer, or inhibitor in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops only. Isopropyl Alcohol is exempted from the requirement of a tolerance when used as a solvent or co-solvent in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to animals.

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: This product regulated by the Therapeutic Products Programme (TPP) of Health Canada and so it is exempt from requirements of the DSL/NDSL Inventory.

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists: The Isopropyl Alcohol component has CEPA Reporting Requirements as a: Substance With Greatest Potential For Human Exposure Substance on Environment Canada/Health Canada Pilot Project List (CEPA 1999, Section 73).Meets categorization criteria: *may present, to individuals in Canada, the greatest potential for exposure; or *are persistent or bioaccumulative in accordance with the regulations, and inherently toxic to human beings or to non-human organisms, as determined by laboratory or other studies.

Other Canadian Regulations: Not applicable.

Canadian WHMIS Classification and Symbols: The WHMIS Requirements of the Hazardous Products Act does not apply in respect of the advertising, sale or importation of any cosmetic, device, drug or food within the meaning of the Food and Drugs Act.

EUROPEAN REGULATIONS:

Safety, Health, and Environmental Regulations/Legislation Specific for the Product: Formulated, finished medicinal products for human use are subject to Directive 2001/83/EC and subsequent amendments to the directive.

Chemical Safety Assessment: No Data Available. The chemical safety assessment is required for some substances according to European Union Regulation (EC) 1907/2006, Article 14.

16. OTHER INFORMATION

ANSI LABELING (Based on 129.1, Provided to Summarize Occupational Exposure Hazards): **DANGER!** FLAMMABLE LIQUID. MAY HARMFUL IF ACCIDENTALLY INGESTED. PROLONGED USE MAY CAUSE ADVERSE EFFECTS ON BONES, ENDROCRINE AND BLOOD SYSTEMS, AND SLOW WOUND HEALING. LIMITED EVIDENCE OF HARM TO FETUS DURING PREGNANCY, BASED ON ANIMAL DATA. Do not taste or swallow. Avoid contact with skin or clothing. Avoid breathing mists or sprays. Keep container tightly closed. Use only with adequate ventilation. Wash thoroughly after handling. Wear gloves, goggles, and appropriate body protection during handling or administration. FIRST-AID: In case of contact, flush eyes with plenty of water. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, call a physician immediately. Do NOT induce vomiting unless directed by a physician. Never give anything by mouth to an unconscious person. IN CASE OF FIRE: Use water fog, dry chemical, CO_2, or “alcohol” foam. IN CASE OF SPILL: Wipe up spilled product. Place residual in appropriate container and seal. Dispose of according to applicable regulations. Consult Material Safety Data Sheet for additional information.

16. OTHER INFORMATION (Continued)

GLOBAL HARMONIZATION AND EU CLP REGULATION (EC) 1272/2008 LABELING AND CLASSIFICATION: According to Article 1, item 5 (a) of CLP Regulation (EC) 1272/2008, medicinal products in the finished state for human use, as defined in 2001/83/EC, are excepted from classification and other criteria of 1272/2008.

67/548/EEC EU LABELING/CLASSIFICATION: According to Article 1 of European Union Council Directive 92/32/EEC, medical products in the finished state for human use (as defined by European Union Council Directives 67/548/EEC and 87/21/EEC) are not subject to the regulations and administrative provisions of European Union Council Directive 92/32/EEC.

CLASSIFICATION FOR COMPONENTS:

Full Text CLP 1272/2008/Global Harmonization:

Betamethasone Valerate: This is a self-classification.

Classification: Reproductive Toxicity Category 2, Acute Oral Toxicity Category 5, Skin Irritation Category 2, Specific Target Organ Toxicity (Skin-Endocrine System, Bones) Category 2

Hazard Statements: H361d: Suspected of damaging the unborn child. H315: Causes skin irritation.H303: May be harmful if swallowed. H373: May cause damage to organs through prolonged or repeated exposure.

Isopropyl Alcohol: The following is a Self-Classification.

Classification: Flammable Liquid Category 2, Eye Irritation Category 2A, Specific Target Organ Toxicity (Inhalation/Ingestion-Narcotic Effects) Single Exposure Category 3

Hazard Statement Codes: H225: Highly flammable liquid and vapour. H319: Causes serious eye irritation. H336: May cause drowsiness or dizziness.

All Other Components: No classification has been published or is applicable.

Full Text EU 67/548/EEC:

Betamethasone Valerate: This is a self-classification.

Classification: Reproductive Toxicity Category 3, Harmful, Irritant

Risk Phrases: R63: Possible risk of harm to the unborn child. R38: Irritating to skin. R33: Danger of cumulative effects.

Isopropyl Alcohol: The following is a Self-Classification.

Classification: Highly Flammable, Irritant

Risk Phrases: R11: Highly flammable. R36: Irritating to eyes. R67: Vapours may cause drowsiness and dizziness.

All Other Components: No classification has been published or is applicable.

REVISION DETAILS: June 2014: Up-date of entire SDS to include European CLP and the Global Harmonization Standard.
REFERENCES AND DATA SOURCES: Contact the supplier for information.
METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Bridging principles were used to classify this product.

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc. • PO Box 1961, Hilo, HI 96721 • 800/441-3365 • 808/969-4846
DATE OF PRINTING: July 12, 2014

DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAKs: Federal Republic of Germany Maximum Concentration Values in the workplace. Exposure limits are given as TWA (Time-Weighted Average) or PEAK (short-term exposure) values.

DFG MAK Germ Cell Mutagen Categories: 1: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed humans. **2:** Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed mammals. **3A:** Substances that have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. **3B:** Substances that are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but that are clearly mutagenic in vitro and structurally related to known in vivo mutagens. **4:** Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g. purely aneugenic substances] if research results make this seem sensible.) **5:** Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: Group A: A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can lead to damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. **Group B:** Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. **Group C:** There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. **Group D:** Classification in one of the groups A–C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

EXPOSURE LIMITS IN AIR (continued):

IDLH: Immediately Dangerous to Life and Health. This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL" is placed next to the PEL that was vacated by Court Order.

SKIN: Used when a there is a danger of cutaneous absorption.

STEL: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV: Threshold Limit Value. An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

WEEL: Workplace Environmental Exposure Limits from the AIHA.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS: This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARD: **0** Minimal Hazard: No significant health risk, irritation of skin or eyes not anticipated. *Skin Irritation*: Essentially non-irritating. Mechanical irritation may occur. PII or Draize = 0. *Eye Irritation*: Essentially non-irritating, minimal effects clearing in < 24 hours. Mechanical irritation may occur. Draize = 0. *Oral Toxicity LD_{50} Rat*: > 5000 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit*: > 2000 mg/kg. *Inhalation Toxicity 4-hrs LC_{50} Rat*: > 20 mg/L.

DEFINITION OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

HEALTH HAZARD (continued): **1** Slight Hazard: Minor reversible injury may occur; may irritate the stomach if swallowed; may defat the skin and exacerbate existing dermatitis. *Skin Irritation*: Slightly or mildly irritating. PII or Draize > 0 < 5. *Eye Irritation*: Slightly to mildly irritating, but reversible within 7 days. Draize > 0 ≤ 25. *Oral Toxicity LD_{50} Rat*: > 500–5000 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit*: > 1000–2000 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat*: > 2–20 mg/L. **2** Moderate Hazard: Temporary or transitory injury may occur; prolonged exposure may affect the CNS. *Skin Irritation*: Moderately irritating; primary irritant; sensitizer. PII or Draize ≥ 5, with no destruction of dermal tissue. *Eye Irritation*: Moderately to severely irritating; reversible corneal opacity; corneal involvement or irritation clearing in 8–21 days. Draize = 26–100, with reversible effects. *Oral Toxicity LD_{50} Rat*: > 50–500 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit*: > 200–1000 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat*: > 0.5–2 mg/L. **3** Serious Hazard: Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. *Skin Irritation*: Severely irritating and/or corrosive; may cause destruction of dermal tissue, skin burns, and dermal necrosis. PII or Draize > 5–8, with destruction of tissue. *Eye Irritation*: Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. *Oral Toxicity LD_{50} Rat*: > 1–50 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit*: > 20–200 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat*: > 0.05–0.5 mg/L. **4** Severe Hazard: Life-threatening; major or permanent damage may result from single or repeated exposure; extremely toxic; irreversible injury may result from brief contact. *Skin Irritation*: Not appropriate. Do not rate as a 4, based on skin irritation alone. *Eye Irritation*: Not appropriate. Do not rate as a 4, based on eye irritation alone. *Oral Toxicity LD_{50} Rat*: ≤ 1 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit*: ≤ 20 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat*: ≤ 0.05 mg/L.

FLAMMABILITY HAZARD: **0** Minimal Hazard: Materials that will not burn in air when exposure to a temperature of 815.5°C (1500°F) for a period of 5 minutes. **1** Slight Hazard: Materials that must be pre-heated before ignition can occur. Material requires considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur. This usually includes the following: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C (200°F) (i.e. OSHA Class IIIB); and Most ordinary combustible materials (e.g. wood, paper, etc.). **2** Moderate Hazard: Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres with air. This usually includes the following: Liquids having a flash-point at or above 37.8°C (100°F); Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres; Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp); and Solids and semisolids (e.g. viscous and slow flowing as asphalt) that readily give off flammable vapors. **3** Serious Hazard: Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions. This usually includes the following: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 38°C (100°□F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. OSHA Class IB and IC); Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air (e.g., dusts of combustible solids, mists or droplets of flammable liquids); and Materials that burn extremely rapidly, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). **4** Severe Hazard: Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and that will burn readily. This usually includes the following: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. OSHA Class IA); and Materials that ignite spontaneously when exposed to air at a temperature of 54.4°C (130°F) or below (pyrophoric).

PHYSICAL HAZARD: **0** *Water Reactivity*: Materials that do not react with water. *Organic Peroxides*: Materials that are normally stable, even under fire conditions and will not react with water. *Explosives*: Substances that are Non-Explosive. *Compressed Gases*: No Rating. *Pyrophorics*: No Rating. *Oxidizers*: No 0 rating. *Unstable Reactives*: Substances that will not polymerize, decompose, condense, or self-react.). **1** *Water Reactivity*: Materials that change or decompose upon exposure to moisture. *Organic Peroxides*: Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy violently. *Explosives*: Division 1.5 & 1.6 explosives. Substances that are very insensitive explosives or that do not have a mass explosion hazard. *Compressed Gases*: Pressure below OSHA definition. *Pyrophorics*: No Rating. *Oxidizers*: Packaging Group III oxidizers; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. *Unstable Reactives*: Substances that may decompose condense, or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosion hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors. Substances that readily undergo hazardous polymerization in the absence of inhibitors. **2** *Water Reactivity*: Materials that may react violently with water. *Organic Peroxides*: Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. *Explosives*: Division 1.4 explosives. Explosive substances where the explosive effects are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. *Compressed Gases*: Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics*: No Rating. *Oxidizers*: Packing Group II oxidizers. Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

PHYSICAL HAZARD (continued): **2 (continued):** Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. *Reactives*: Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential (or low risk) for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature. **3** *Water Reactivity*: Materials that may form explosive reactions with water. *Organic Peroxides*: Materials that are capable of detonation or explosive reaction, but require a strong initiating source or must be heated under confinement before initiation; or materials that react explosively with water. *Explosives*: Division 1.3 explosives. Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. *Compressed Gases*: Pressure ≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics*: No Rating. *Oxidizers*: Packing Group I oxidizers. Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. Liquids: any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture. *Unstable Reactives*: Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a moderate potential (or moderate risk) to cause significant heat generation or explosion. **4** *Water Reactivity*: Materials that react explosively with water without requiring heat or confinement. *Organic Peroxides*: Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. *Explosives*: Division 1.1 & 1.2 explosives. Explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. *Compressed Gases*: No Rating. *Pyrophorics*: Add to the definition of Flammability 4. *Oxidizers*: No 4 rating. *Unstable Reactives*: Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a high potential (or high risk) to cause significant heat generation or explosion.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: **0** Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials. Gases and vapors with an LC_{50} for acute inhalation toxicity greater than 10,000 ppm. Dusts and mists with an LC_{50} for acute inhalation toxicity greater than 200 mg/L. Materials with an LD_{50} for acute dermal toxicity greater than 2000 mg/kg. Materials with an LD_{50} for acute oral toxicity greater than 2000 mg/kg. Materials essentially non-irritating to the respiratory tract, eyes, and skin. **1** Materials that, under emergency conditions, can cause significant irritation. Gases and vapors with an LC_{50} for acute inhalation toxicity greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists with an LC_{50} for acute inhalation toxicity greater than 10 mg/L but less than or equal to 200 mg/L. Materials with an LD_{50} for acute dermal toxicity greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials that slightly to moderately irritate the respiratory tract, eyes and skin. Materials with an LD_{50} for acute oral toxicity greater than 500 mg/kg but less than or equal to 2000 mg/kg. **2** Materials that, under emergency conditions, can cause temporary incapacitation or residual injury. Gases with an LC_{50} for acute inhalation toxicity greater than 3,000 ppm but less than or equal to 5,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 5000 ppm and that does not meet the criteria for either degree of hazard 3 or degree of hazard 4. Dusts and mists with an LC_{50} for acute inhalation toxicity greater than 2 mg/L but less than or equal to 10 mg/L. Materials with an LD_{50} for acute dermal toxicity greater than 200 mg/kg but less than or equal to 1000 mg/kg. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause severe tissue damage, depending on duration of exposure. Materials that are respiratory irritants. Materials that cause severe, but reversible irritation to the eyes or are lachrymators. Materials that are primary skin irritants or sensitizers. Materials whose LD_{50} for acute oral toxicity is greater than 50 mg/kg but less than or equal to 500 mg/kg. **3** Materials that, under emergency conditions, can cause serious or permanent injury. Gases with an LC_{50} for acute inhalation toxicity greater than 1,000 ppm but less than or equal to 3,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Dusts and mists with an LC_{50} for acute inhalation toxicity greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials with an LD_{50} for acute dermal toxicity greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials corrosive to the skin. Cryogenic gases that cause frostbite and irreversible tissue damage. Compressed liquefied gases with boiling points below -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials with an LD_{50} for acute oral toxicity greater than 5 mg/kg but less than or equal to 50 mg/kg. **4** Materials that, under emergency conditions, can be lethal. Gases with an LC_{50} for acute inhalation toxicity less than or equal to 1,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than ten times its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 1000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD_{50} for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD_{50} for acute oral toxicity is less than or equal to 5 mg/kg.

FLAMMABILITY HAZARD: **0** Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in according with Annex D of NFPA 704. **1** Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in according with Annex D of NFPA 704. Liquids, solids, and semisolids having a flash point at or above 93.4°C (200°F) (i.e. Class IIIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the *Method of Testing for Sustained Combustibility*, per 49 CFR 173, Appendix H or the UN *Recommendations on the Transport of Dangerous Goods, Model Regulations* (current edition) and the related *Manual of Tests and Criteria* (current edition).

DEFINITION OF TERMS (Continued)

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

FLAMMABILITY HAZARD (continued): **1 (continued):** Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85% by weight. Liquids that have no fire point when tested by ASTM D 92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup*, up to the boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Most ordinary combustible materials. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **2** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air. Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (i.e. Class II and Class IIIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures with air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal, and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **3** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions. Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. Class IB and IC liquids). Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **4** Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily. Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. Class IA liquids). Materials that ignite when exposed to air, Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

INSTABILITY HAZARD: **0** Materials that in themselves are normally stable, even under fire conditions. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. **1** Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. **2** Materials that readily undergo violent chemical change at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100W/mL. **3** Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. **4** Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (**NFPA**). Flash Point: Minimum temperature at which a liquid gives off sufficient vapor to form an ignitable mixture with air near the surface of the liquid or within the test vessel used. Autoignition Temperature: Minimum temperature of a solid, liquid, or gas required to initiate or cause self-sustained combustion in air with no other source of ignition. LEL: Lowest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame. UEL: Highest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. LD_{50}: Lethal Dose (solids & liquids) that kills 50% of the exposed animals. LC_{50}: Lethal Concentration (gases) that kills 50% of the exposed animals. ppm: Concentration expressed in parts of material per million parts of air or water. mg/m^3: Concentration expressed in weight of substance per volume of air. mg/kg: Quantity of material, by weight, administered to a test subject, based on their body weight in kg. TDLo: Lowest dose to cause a symptom. TCLo: Lowest concentration to cause a symptom. TDo, LDLo, and LDo, or TC, TCo, LCLo, and LCo: Lowest dose (or concentration) to cause lethal or toxic effects. **Cancer Information:** IARC: International Agency for Research on Cancer. NTP: National Toxicology Program. RTECS: Registry of Toxic Effects of Chemical Substances. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information:** BEI: ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

REPRODUCTIVE TOXICITY INFORMATION:

A mutagen is a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generation lines. An embryo toxin is a chemical that causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance that interferes in any way with the reproductive process.

ECOLOGICAL INFORMATION:

EC: Effect concentration in water. BCF: Bioconcentration Factor, which is used to determine if a substance will concentrate in life forms that consume contaminated plant or animal matter. TLm: Median threshold limit. log K_{OW} or log K_{OC}: Coefficient of Oil/Water Distribution is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S.:

EPA: U.S. Environmental Protection Agency. ACGIH: American Conference of Governmental Industrial Hygienists, a professional association that establishes exposure limits. OSHA: U.S. Occupational Safety and Health Administration. NIOSH: National Institute of Occupational Safety and Health, which is the research arm of OSHA. DOT: U.S. Department of Transportation. TC: Transport Canada. SARA: Superfund Amendments and Reauthorization Act. TSCA: U.S. Toxic Substance Control Act. CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act. Marine Pollutant status according to the DOT; CERCLA or Superfund; and various state regulations. This section also includes information on the precautionary warnings that appear on the material's package label.

CANADA:

WHMIS: Canadian Workplace Hazardous Materials Information System. TC: Transport Canada. DSL/NDSL: Canadian Domestic/Non-Domestic Substances List.

REVISION HISTORY

Date	**Changes**
June 10, 2014	Up-date to add GHS & EU compliance.
November 26, 2011	Company name change correction. Change of heading text, Section 5. Review and up-date of exposure limits to current, Section 8. Change text on Reproductive Toxicity, Section 11. Revision to Definition of Terms. Up-date Section 12. Revise Canadian WHMIS status. Move ANSI Labeling to Section 16. Add revision history section.