SAFETY DATA SHEET

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

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

PRODUCT IDENTIFIER/TRADE/MATERIAL NAME: PACLITAXEL INJECTION, USP

DESCRIPTION: Paclitaxel Injection Solution
PRODUCT USE: Human Pharmaceutical
USES ADVISED AGAINST: Non-Pharmaceutical Use
CHEMICAL NAME: For Active Ingredient: 5β,20-Epoxy-1,2α,4,7β,10β,13α-hexahydroxytax-11-en-9-one 4,10-diacetate 2-benzoate 13-ester with (2*R*,3*S*)-N-benzoyl-3-phenylisoserine
CHEMICAL FAMILY: For Active Ingredient: Taxane
FORMULA: For Active Ingredient: $C_{47}H_{51}NO_{14}$
HOW SUPPLIED: Paclitaxel in 30 mg/5 mL, 100 mg/16.7 mL and 300 mg/50 mL Multi-Dose vials
OTHER DESIGNATIONS: NDC 45963-613-56: 30 mg/5 mL multi-dose vial individually packaged in a carton;
NDC 45963-613-53; 100 mg/16.7 mL multi-dose vial individually packaged in a carton;
NDC 45963-613-59: 300 mg/50 mL multi-dose vial individually packaged in a carton

SUPPLIER OF THE SAFETY DATA SHEET

RESPONSIBLE PARTY U.S.:	**ACTAVIS, INC.**
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NOTE: ALL United States Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, Canadian WHMIS [Controlled Products Regulations], EU Directives through EC 1907: 2006, and European Union CLP EC 1272/2008, required information is included in appropriate sections based on the U.S. ANSI Z400.1-2010 format. This compound has been classified in accordance with the hazard criteria of the countries listed above.

DATE OF PREPARATION: December 15, 2014 **DATE OF REVISION:** New

2. HAZARDS IDENTIFICATION

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 67/548/EEC LABELING AND 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 clear, colorless to slightly yellow viscous solution.

Health Hazards: WARNING! THIS PRODUCT CONTAINS A CYTOTOXIC AGENT. EXPOSURE BY ALL ROUTES OF EXPOSURE MUST BE AVOIDED. May be harmful if ingested, inhaled or in skin contact. In the workplace, exposure via inhalation and skin contact may cause irritation. Inhalation of vapors or accidental ingestion may cause adverse central nervous system effects, due Denatured Alcohol content. Eye contact can cause irritation. In therapeutic use, the most common adverse effects reported have been low red blood cell count (anemia) feeling weak or tired hair loss, numbness, tingling, or burning in your hands or feet (neuropathy), joint and muscle pain, nausea and vomiting, hypersensitivity reactions (trouble breathing; sudden swelling of your face, lips, tongue, throat, or trouble swallowing; hives (raised bumps) or rash, diarrhea, mouth or lip sores, infections, swelling of your hands, face, or feet, bleeding events, irritation and reaction at the injection site, low blood pressure. Allergic reaction, including anaphylaxis, may occur and be severe; no information is available that workplace exposure can cause reactions. May harm cause to the fetus, based on animal information. Limited evidence of mutagenic effects and adverse effects on fertility for both genders, based on animal data. These effects may be possible as a result of workplace exposure. Refer to Section 11 (Toxicological Information) for additional information on adverse effects.

Flammability Hazards: This product is flammable and can ignite if exposed to high temperature, an ignition source or direct flame. When involved in a fire, this product may ignite and produce irritating vapors and toxic compounds (including carbon and nitrogen oxides).

Environmental Hazards: The active ingredient of this product is harmful to aquatic organisms and may cause harm to animals and aquatic organisms if accidentally released to the environment.

Emergency Recommendations: Emergency responders must wear personal protective equipment suitable for the situation to which they are responding.

3. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	EINECS #	% w/w	LABEL ELEMENTS EU Classification (67/548/EEC) GHS and EU Classification (1272/2008 EC) Risk Phrases/Hazard Statements
ACTIVE INGREDIENT				
Paxlitaxel 5β,20-Epoxy-1,2α,4,7β,10β,13α-hexahydroxytax-11-en-9-one 4,10-diacetate 2-benzoate 13-ester with (2*R*,3*S*)-N-benzoyl-3-phenylisoserine	33069-62-4	Not Listed	Proprietary	SELF CLASSIFICATION EU 67/548 Classification: Germ Cell Mutagenic Cat. 3, Reproductive Toxicity Cat. 2, Harmful Risk Phrase Codes: R61, R62, R68, R64, R48/20/22 Hazard Symbols: T GHS and EU 1272/2008 Classification: Germ Cell Mutagenic Cat. 2, Reproductive Toxicity Cat. 1B, Adverse Effects on or via Lactation, STOT RE Cat. 2 Hazard Codes: H341, H360FD, H362, H372 Hazard Symbol/Pictogram: GHS08
EXCIPIENTS				
Castor Oil, Ethoxylated	61791-12-6	NLP# 500-151-7	Proprietary	EU 67/548 Hazard Classification: GHS and EU 1272/2008 Hazard Classification:
Citric Acid	77-92-9	201-069-1	Proprietary	EU 67/548 CLASSIFICATION: Not Applicable GHS AND EU 1272/2008 Classification: Not Applicable
Dehydrated Alcohol	64-17-5	200-578-6	Proprietary	EU 67/548 Classification: Highly Flammable Risk Phrases: R11 Hazard Symbols: F GHS & EU 1272/2008 Classification: Flammable Liquid Cat. 2 Hazard Statement Codes: H225 Hazard Symbols/Pictograms: GHS02

See Section 16 for full classification information of this product.

4. FIRST-AID MEASURES

PROTECTION OF FIRST AID RESPONDERS: First-aid responders should not attempt to treat victims of exposure to this material without adequate personal protective equipment. Rescuers should be taken for medical attention, if necessary.

DESCRIPTION OF FIRST AID MEASURES: WARNING! Persons experiencing serious hypersensitivity (anaphylactic) reactions must receive immediate medical attention. Contaminated individuals must be taken for medical attention if any adverse effects occur. Remove contaminated clothing and shoes. Wash clothing and thoroughly clean shoes before reuse. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, when necessary. Take copy of SDS to physician or other health professional with victim(s).

Inhalation: If mists or sprays from this product are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if adverse effect occurs after removal to fresh air.

Skin Exposure: Basic hygiene should prevent any problems. If the product contaminates the skin, and adverse effect occurs, begin decontamination with running water. Minimum flushing is for 20 minutes. Do not interrupt flushing. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Seek medical attention if adverse effect occurs after flushing.

Eye Exposure: If this product enters the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 20 minutes. Do not interrupt flushing. Seek immediate medical attention after flushing if adverse effect occurs.

Ingestion Exposure: 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. Rinse mouth with water immediately. Victim should drink large quantities of water. If milk is available, victim should drink it after drinking water. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow.

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

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: In therapeutic use, preexisting hepatic and renal insufficiency, bone marrow or blood disorders, or cardiovascular disease may be aggravated by exposure to this product. Persons who may have hypersensitivity reactions to the active ingredient or other disorders described in Section 11 (Toxicological Information) may be aggravated by therapeutic use. Workplace exposure may also aggravate these conditions.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate overexposure. There is no specific antidote for this drug. Persons developing hypersensitivity reactions should receive immediate medical attention. Allergic reaction, including anaphylaxis, may occur and be severe. In event of severe hypersensitivity reactions, corticosteroids (such as dexamethasone), diphenhydramine and H2 antagonists (such as cimetidine or ranitidine) can be administered.

5. FIRE-FIGHTING MEASURES

FLASH POINT: 14-16°C (57.2-60.8°F)

AUTOIGNITION TEMPERATURE: Not available for product. For Dehydrated Alcohol: 363°C (685°F)

FLAMMABLE LIMITS (in air by volume, %): Not available for product.

	LEL	UEL
For Dehydrated Alcohol:	3.3%	19.0%

FIRE EXTINGUISHING MEDIA: Unless incompatibilities exist for surrounding materials, carbon dioxide, water spray, 'ABC' type chemical extinguishers, foam, dry chemical and halon extinguishers can be used to fight fires involving this product.

UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

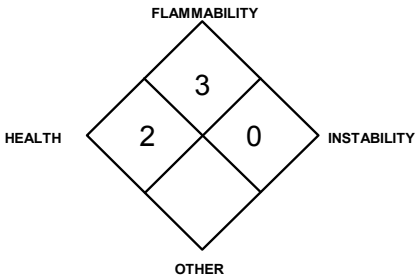
5. FIRE-FIGHTING MEASURES (Continued)

SPECIFIC HAZARDS ARISING FROM THE PRODUCT: This product is combustible and can ignite if exposed to direct flame or high temperature. When involved in a fire, this material may decompose and produce irritating vapors and toxic compounds (including carbon and nitrogen oxides). Vapors can accumulate in confined spaces resulting in a toxicity and flammability hazard. Vapor may be slightly heavier than air and can travel a considerable distance to a source of ignition and flash back to a leak or open container

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: May be sensitive.

NFPA RATING



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

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Evacuate area and fight fire from a safe distance. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. In the event of fire, cool containers of this material with water to prevent failure. For small releases, if it is not possible to stop the leak, and it does not endanger personnel, let the fire burn itself out. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. All personal protective gear and contaminated fire-response equipment should be decontaminated with soapy water and rinsed before being returned to service. Move fire-exposed containers if it can be done without risk to firefighters. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: An accidental release can result in a fire. Eliminate any possible sources of ignition, and provide maximum explosion-proof ventilation. Use only non-sparking tools and equipment during the response. 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.

PROTECTIVE EQUIPMENT:

Small Spills: For incidental spills (e.g., 1 vial), wear double latex or nitrile disposable gloves and eye protection.

Large Spills: Use proper protective equipment, including double nitrile or appropriate gloves, protective clothing (i.e., Tyvek coveralls), 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 CLEANUP AND CONTAINMENT:

Small Spills: Absorb up spilled material with damp sponge, polypads or other suitable material.

Large Spills: 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: Decontaminate the area of the spill thoroughly using detergent and water. All contaminated material should be labeled as cytotoxic waste. Move to a secure area. Do not mix with wastes from other materials. If necessary, discard contaminated response equipment or rinse with soapy water before returning such equipment to service. Dispose of in accordance with applicable international, national, state, and local procedures (see Section 13, Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS: Prevent material 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.

7. HANDLING and USE

NOTE: Consistent with the OSHA Bloodborne Pathogen regulation (29 CFR 1910.1030), observe Universal Precautions while using this product. Place used or product-contaminated hypodermic needles and syringes in a rigid "Sharps" container. Do not recap or clip used or product-contaminated hypodermic needles.

PRECAUTIONS FOR SAFE HANDLING: THIS PRODUCT CONTAINS A CYTOTOXIC AGENT. ALL WORK PRACTICES MUST BE DESIGNED TO REDUCE HUMAN EXPOSURE TO THE LOWEST LEVEL. All employees who handle this product should be trained to handle it safely. Particular care in working with this product must be practiced in pharmacies and other preparation areas, during manufacture of this compound, and during patient administration. As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product or equipment and containers that contain this product. Do not eat or drink while using this product. Avoid breathing airborne mists or spray generated by this product. Ensure this product is used with adequate ventilation (refer to Section 8, Exposure Controls-Personal Protection). Remove contaminated clothing immediately. Keep container tightly closed when not in use. Use non-sparking tools. Open containers slowly on a stable surface in areas that have been designated for use of this product. Wipe down areas in which this product is used, so that product does not accumulate. Empty containers may contain residual material; therefore, empty containers should be handled with care. Operations of high risk associated with this product include:

- Filling, packaging and handling of vials
- Withdrawal of needles from drug vials;
- Drug transfers using syringes and needles or filter straws;
- Opening ampoules; and
- Expulsion of air from drug-filled syringes.

DO NOT CLIP OR CRUSH NEEDLE WITH WHICH THIS PRODUCT WAS IN CONTACT.

7. HANDLING and USE (Continued)

PRECAUTIONS FOR SAFE HANDLING (continued):

Preparation and administration of this product should meet the following provisions:

- Work should be performed in a designated area for working with hazardous drugs;
- Containment devices, such as a Biological Safety Cabinet, should be used; contaminated waste must be properly handled; and
- Work areas must be regularly decontaminated.

Good hygiene practices must be in place for workers handling this material, including change facilities and a work place clothing program. Workers whose clothing may have become contaminated should change into uncontaminated clothing before leaving the work premises. Contaminated protective clothing should be segregated in such a manner so that there is no direct personal contact by personnel who handle, dispose, or clean the clothing. Contaminated clothing is required to be disposed of properly or remain in the work place for cleaning. No contaminated clothing should be taken from the employee's place of work.

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 material must be properly labeled. Store containers in a cool, dry location, away from direct sunlight and sources of intense heat. Recommended Storage Temperature: 20° to 25°C (68° to 77°F). Protect from light. Store away from incompatible materials (see Section 10, Stability and Reactivity). Material 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. Empty containers may contain residual material; therefore, empty containers should be handled with care and disposed of properly. Have appropriate extinguishing equipment in the storage area (e.g., sprinkler system, portable fire extinguishers). Containers should be separated from oxidizing materials by a minimum distance of 20 ft. or by a barrier of non-combustible material at least 5 ft. high having a fire-resistance rating of at least 0.5 hours. Storage areas should be made of fire resistant materials. Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Refer to NFPA 30, *Flammable and Combustible Liquids Code*, for additional information on storage. Have appropriate extinguishing equipment in the storage area (such as sprinkler systems or portable fire extinguishers). Inspect all incoming containers before storage to ensure containers are properly labeled and not damaged. Empty containers may contain residual product; therefore, empty containers should be handled with care.

SPECIFIC END 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.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

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 SDS.

Occupational/Workplace Exposure Limits/Guidelines: Note: Hydrochloric Acid is added for pH balancing and once reacted with other ingredients, no free Hydrochloric Acid exposure is likely; no limits this material are given in this SDS.

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
Paclitaxel	33069-62-4	THIS IS A CYTOTOXIC AGENT. ALL WORK PRACTICES MUST BE DESIGNED TO REDUCE HUMAN EXPOSURE TO THE LOWEST LEVEL.							
Castor Oil	61791-12-6	NE	NE	NE	NE	NE	NE	NE	NE
Citric Acid	77-92-0	NE	NE	NE	NE	NE	NE	NE	NE
Dehydrated Alcohol	64-17-5	NE	1000	1000	NE	1000	NE	3300 (based on 10% of LEL)	DFG MAKs: TWA = 500 PEAK = 2•MAK 15 min average value, 1-hr interval, 4 per shift DFG MAK Pregnancy Risk Classification: C DFG MAK Mutagenic Category 5 Carcinogen: MAK-5, TLV-A3

NE = Not Established

International Occupational Exposure Limits: The following additional exposure limits are in force for components of this product. Exposure limits change or are added and should be checked periodically.

ETHANOL:

Australia: TWA = 1000 ppm (1880 mg/m^3), JUL 2008
Austria: MAK-TMW = 1000 ppm (1900 mg/m^3); KZW = 2000 ppm (3800 mg/m^3), 2007
Belgium: TWA = 1000 ppm (1907 mg/m^3), MAR 2002
Denmark: TWA = 1000 ppm (1900 mg/m^3), MAY 2011
Finland: TWA = 1000 ppm (1900 mg/m^3), STEL = 1300 ppm (2500 mg/m^3), NOV 2011
France: VME = 1000 ppm (1900 mg/m^3), VLE = 5000 ppm (9500), FEB 2006
Germany: MAK = 500 ppm (960 mg/m^3), 2011
Hungary: TWA = 1900 mg/m^3, STEL = 7600 mg/m^3, SEP 2000
Iceland: TWA = 1000 ppm (1900 mg/m^3), NOV 2011
Korea: TWA = 1000 ppm (1900 mg/m^3), 2006
Mexico: TWA = 1000 ppm (1900 mg/m^3), 2004
The Netherlands: MAC-TGG = 1000 mg/m^3, 2003
New Zealand: TWA = 1000 ppm (1880 mg/m^3), JAN 2002
Norway: TWA = 500 ppm (950 mg/m^3), JAN 1999
Peru: TWA = 1000 ppm (1884 mg/m^3), JUL2005
The Philippines: TWA = 1000 ppm (1900 mg/m^3), JAN 1993
Poland: MAC(TWA) = 1000 mg/m^3, MAC(STEL) = 3000 mg/m^3, JAN 1999
Russia: TWA = 1000 mg/m^3, STEL = 2000 mg/m^3, JUN 2003
Sweden: TWA = 500 ppm (1000 mg/m^3); STEL = 1000 ppm (1900 mg/m^3), JUN 2005
Switzerland: MAK-W = 500 ppm (960 mg/m^3), KZG-W = 1000 ppm (1920 mg/m^3), JAN 2011
Thailand: TWA = 1000 ppm (1900 mg/m^3), JAN 1993
Turkey: TWA = 1000 ppm (1900 mg/m^3), JAN 1993
United Kingdom: TWA = 1000 ppm (1920 mg/m^3), OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT: Use of personal protective equipment must be in compliance with U.S. OSHA 29 CFR Subpart I (beginning at 1910.132), Canadian CSA Standards Z94.4-02 and Z94.3-02, EU EN 529:2005, CEN/TR 15419:2006, and CR 13464:1999. Please reference applicable regulations and standards for relevant details.

Respiratory Protection: A respirator is not required for routine conditions of use with adequate engineering controls. A full-face Air-Purifying Respirator with high-efficiency particulate filter or a Supplied-Air Respirator must be worn during operations where engineering controls are not sufficient, large spill cleanup, or when processing generates airborne aerosols. If respiratory protection is needed, use only respiratory protection authorized under appropriate regional regulations. The following are NIOSH respiratory protective equipment guidelines for the Dehydrated Alcohol component and are presented to assist in selection of protective respiratory equipment, if needed.

ETHYL ALCOHOL

CONCENTRATION	RESPIRATORY PROTECTION
Up to 3300 ppm:	Any Supplied-Air Respirator (SAR), or any Self-Contained Breathing Apparatus (SCBA) with a full facepiece.
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 appropriate escape-type, SCBA.

Eye Protection: During operations in which mists or sprays may be generated, splash goggles or safety glasses should be considered.

Hand Protection: During manufacture or other similar industrial operations, wear the appropriate hand protection for the process. Use double gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS.

Body 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

The following information is for the drug product.

FORM: Somewhat viscous liquid.
COLOR: Clear, colorless to slightly yellow.
ODOR: Odorless.
ODOR THRESHOLD: Not applicable.
MOLECULAR WEIGHT: Mixture.
MOLECULAR FORMULA: Mixture.
FLASH POINT: 14-16°C (57.2-60.8°F)

HOW TO DETECT THIS PRODUCT (identification/warning properties): Product color can be a distinguishing characteristic of in event of accidental release.

The following information is for the active ingredient, Paclitaxel.

FORM: Crystalline solid.
COLOR: White.
MOLECULAR WEIGHT: 853.9
MOLECULAR FORMULA: $C_{47}H_{51}NO_{14}$
ODOR: Odorless.
ODOR THRESHOLD: Odorless.
BOILING POINT @ 760 mmHg: 957.1°C (1754.8°F) [predict.]
MELTING POINT: > 185°C (> 311°F)
VAPOR PRESSURE (air = 1) @ 25°C: 0 mmHg [predict.]
SPECIFIC GRAVITY (water = 1): .399 g/cm^3 [predict.]
EVAPORATION RATE (nBuAc = 1): Not applicable.
FLASH POINT: 532.6°C (990.7°F) [predict.]
SOLUBILITY IN WATER: Insoluble.
pH: Not available.
OTHER SOLUBILITIES: Soluble in methanol and methylene chloride.
COEFFICIENT WATER/OIL DISTRIBUTION @ 20°C: Log P: 3.95 (predict.)

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: This product is stable.

DECOMPOSITION PRODUCTS: ***Combustion:*** If exposed to extremely high temperatures, the products of thermal decomposition may include irritating fumes and toxic gases (e.g., carbon and nitrogen oxides). ***Hydrolysis:*** None known.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong acids and bases. Due the high level of Denatured Alcohol this product may also have incompatibilities to hydrogen peroxide, perchloric acid, metal perchlorates, mercuric nitrate, silver nitrate, silver and nitric acid, or silver oxide and aqueous ammonia, alkali metals, bromine pentafluoride or bromides, sodium hydrazide, zirconium tetrachloride, phosphorus (iii) oxide, potassium tert-butoxide, acids, acid anhydrides, or acid chlorides, calcium oxide or cesium oxide, platinum black catalyst, bromine and phosphorus or iodine and phosphorus.

SPECIAL NOTE ON INCOMPATIBILITY: Contact of this product and solutions made with it with plasticized polyvinyl chloride (PVC) equipment or devices used to prepare solutions for infusion are not recommended. In order to minimize patient exposure to the plasticizer DEHP [di-(2-ethylhexyl)phthalate], which may be leached from PVC infusion bags or sets, diluted Paclitaxel injection solutions should preferably be stored in bottles (glass, polypropylene) or plastic bags (polypropylene, polyolefin) and administered through polyethylene-lined administration sets.

POSSIBILITY OF HAZARDOUS REACTIONS OR POLYMERIZATION: Will not occur.

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

11. TOXICOLOGICAL INFORMATION

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

Inhalation: Inhalation of aerosols may irritate the mucous membranes and upper respiratory tract. May be harmful by inhalation, especially if exposure is chronic. Upon inhalation, difficulty breathing, chest pain, burning eyes, sore throat, and nausea have been reported. Chronic, low-level inhalation exposure may cause lightheadedness, dizziness, nausea, headache.

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE (continued):

Inhalation (continued): Although unlikely to occur, due to the high level of Denatured Alcohol, inhalation of high vapor concentration will cause adverse central nervous system effects.

Contact with Skin or Eyes May be harmful by skin contact. Tingling, burning, and redness have been reported following skin contact. Symptoms of eye contact can cause redness, pain, and watering, as well as mechanical irritation. May be harmful by skin contact. Tingling, burning, and redness have been reported following skin contact. Symptoms of eye contact can cause redness, pain, and watering, as well as mechanical irritation.

Skin Absorption: Caution in handling this material must be exercised due to potential harmful effect by skin contact.

Ingestion: Ingestion is not anticipated to be a significant route of occupational exposure. Ingestion of this material (i.e., through poor hygiene practices) may be harmful; no specific information is available.

Injection: Accidental injection of this product, by a contaminated needle or via laceration or puncture wound from a contaminated object may cause local pain and inflammation. Accidental injection may cause leakage of the drug into surrounding tissues and cause tissue damage. May cause serious adverse effects and severe allergic reactions, based on information from therapeutic use. Other possible symptoms are described under 'Other Potential Health Effects'.

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

OTHER POTENTIAL HEALTH EFFECTS-Therapeutic Doses: In therapeutic use, the most common adverse effects reported have been low red blood cell count (anemia) feeling weak or tired hair loss, numbness, tingling, or burning in your hands or feet (neuropathy), joint and muscle pain, nausea and vomiting, hypersensitivity reactions (trouble breathing; sudden swelling of your face, lips, tongue, throat, or trouble swallowing; hives (raised bumps) or rash, diarrhea, mouth or lip sores, infections, swelling of your hands, face, or feet, bleeding events, irritation and reaction at the injection site, low blood pressure. Allergic reaction, including anaphylaxis, may occur and be severe; no information is available that workplace exposure can cause reactions. May harm cause to the fetus, based on animal information. Limited evidence of mutagenic effects and adverse effects on fertility for both genders, based on animal data. These effects may be possible as a result of workplace exposure. The actual risk in the workplace is not known. Body systems adversely affected during therapeutic use are provided below.

- ***Blood and Bone Marrow:*** Abnormally low level of neutrophils in the blood, decrease in the number of white blood cells, anemia, infections, bleeding, adverse red blood cell and platelet effects. Decrease in the number of white blood cells, decrease in level of neutrophils in the blood.
- ***Body as a Whole:*** Anorexia, confusional state, vertigo, fainting, and increase in blood creatinine have been reported.
- ***Cardiovascular System:*** Abnormal heart rate, hypotension, abnormal ECG, rhythm abnormalities, hypertension, and impeded blood flow, and complete AV block have been reported. One case of progressive hypotension leading to arrhythmias and death has occurred.
- ***Ears:*** Reports of ototoxicity (hearing loss and tinnitus) have also been received.
- ***Eyes:*** Conjunctivitis, increased lacrymation and visual floaters have been reported. Optic nerve and/or visual disturbances (scintillating flashes) have occurred; these effects generally have been reversible. However, reports in the literature of abnormal visual effects in patients have suggested persistent optic nerve damage.
- ***Gastrointestinal System:*** Diarrhea, nausea, vomiting, mucositis. Rarely, intestinal obstruction, intestinal perforation, pancreatitis, inflammation of the large intestine and other portions of the digestive system, dehydration, esophagitis, constipation, and abnormal accumulation of fluid in the abdomen have been reported.
- ***Injection Site Reactions:*** Injection site reactions, including reactions secondary to extravasation (leakage of drug in surrounding tissues), were usually mild and consisted of redness, tenderness, skin discoloration, or swelling at the injection site. These reactions have been observed more frequently with the 24 hour infusion than with the 3 hour infusion. Recurrence of skin reactions at a site of previous extravasation following administration of Paclitaxel at a different site, i.e., "recall," has been reported. More severe events such as phlebitis, cellulitis, induration, skin exfoliation, necrosis, and fibrosis have been reported. In some cases the onset of the injection site reaction either occurred during a prolonged infusion or was delayed by a week to 10 days.
- ***Liver:*** Renal toxicity hepatic necrosis and hepatic swelling leading to death have been reported.
- ***Neurological System:*** Hypersensitivity, peripheral neuropathy, convulsions, dizziness, and headache have been reported. autonomic neuropathy resulting in intestinal obstruction due to nerve paralysis has been reported.
- ***Respiratory System:*** Interstitial pneumonia, lung fibrosis, and pulmonary embolism have been reported. Accumulation of fluid in pleural spaces in lungs and respiratory failure have been reported.
- ***Reproductive Toxicity System***: May cause harm to fetus. Adverse effects on fertility may occur, based on animal data.
- ***Skin:*** Hair loss was observed in almost all patients. Treatment-related fluid-accumulation (edema) is common, but severe edema is uncommon. Transient skin changes due to Paclitaxel-related hypersensitivity reactions have been observed, but no other skin toxicities were significantly associated with Paclitaxel administration. Changes in pigmentation or discoloration of nail bed is uncommon. Skin abnormalities related to radiation recall as well as raised, spotted rash, itching, Stevens-Johnson syndrome, and toxic epidermal necrolysis (tissue death), diffuse edema (swelling), skin thickening, and (scleroderma) hardening of the skin have been reported. Paclitaxel has been reported to exacerbate signs and symptoms of scleroderma.

11. TOXICOLOGICAL INFORMATION (Continued)

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

Acute: May be harmful by eye or skin contact and inhalation. Acute exposure may cause damage to blood system and other systems described under 'Other Potential Health Effects'.

Chronic: Dermatitis (inflammation and redness of the skin) may occur after chronic, low-level skin contact. May cause fetal harm. May cause adverse effects on fertility for both genders. Limited evidence of carcinogenic effect. May cause mutagenic effects. Can cause serious allergic reactions. Chronic exposure to this material may cause adverse effects as described under 'Other Potential Health Effects'.

TARGET ORGANS:

Acute: Skin, eyes, respiratory system, blood system.

Chronic: Skin, blood system, reproductive system. In therapeutic use this product may have an impact on the body systems described under 'Other Potential Health Effects'.

IRRITANCY OF PRODUCT: This product may irritate contaminated tissue, especially if contact is prolonged.

SENSITIZATION OF PRODUCT: In therapeutic use, anaphylaxis and other severe hypersensitivity reactions characterized by dyspnea and hypotension requiring treatment, angioedema, and generalized urticaria have occurred. Fatal reactions have occurred in patients despite premedication with corticosteroids.

TOXICITY DATA: The following toxicity data are available for the active ingredient. Due to the large amount of data available, only human data, irritation data, LD50 Oral-Rat or Mouse, LD50 Skin-Rabbit or Rat, LC50 Inhalation Rat or Mouse and mutagenic data are provided in this SDS. Additional data are also available for the excipient components of this product, but are not presented in this SDS. Contact Actavis for more information.

PACLITAXEL:

TDLo (Oral-Human) 2.3 mg/kg: Gastrointestinal: hypermotility, diarrhea; Gastrointestinal: nausea or vomiting

LDLo (Intravenous-Human-Woman) 4995 mg/kg/3 hours-continuous: Cardiac: cardiomyopathy including infarction; Blood: leukopenia, thrombocytopenia

LDLo (Intravenous-Human-Man) 5.14 mg/kg: Immunological Including Allergic: anaphylaxis

LDLo (Intravenous-Human-Man) 5.14 mg/kg: Cardiac: arrhythmias (including changes in conduction); Lungs, Thorax, or Respiration: respiratory obstruction; Immunological Including Allergic: anaphylaxis

TDLo (Intravenous-Human-Man) 9.26 mg/kg/8 weeks-intermittent: Blood: granulocytopenia; Skin and Appendages: dermatitis, allergic (after systemic exposure); Immunological Including Allergic: hypersensitivity delayed

TDLo (Intravenous-Human-Man) 7.7 mg/kg/15 days-intermittent: Blood: leukopenia; Musculoskeletal: other changes; Skin and Appendages: dermatitis, other (after systemic exposure

TDLo (Intravenous-Human-Man) 3.09 mg/kg/15 days-intermittent: Behavioral: anorexia (human); Blood: leukopenia, aplastic anemia

TDLo (Intravenous-Human) 4.5 mg/kg: Blood: leukopenia

TDLo (Intravenous-Human) 2.3 mg/kg: Lungs, Thorax, or Respiration: dyspnea; Skin and Appendages: dermatitis, allergic (after systemic exposure); Immunological Including Allergic: increase in cellular immune response

TDLo (Intravenous-Human) 2.21 mg/kg: Cardiac: arrhythmias (including changes in conduction), other changes; Blood: changes in other cell count (unspecified

TDLo (Intravenous-Human) 27 mg/kg/15 weeks-intermittent: Lungs, Thorax, or Respiration: tumors; Tumorigenic: active as anti-cancer agent

TDLo (Intravenous-Human) 27 mg/kg/15 weeks-intermittent: Lungs, Thorax, or Respiration: tumors; Tumorigenic: active as anti-cancer agent

TDLo (Intravenous-Human) 15.4 mg/kg/9 weeks-intermittent: Blood: granulocytopenia; Musculoskeletal: joints; Skin and Appendages: hair

TDLo (Intravenous-Human) 226 mg/kg/5 years-intermittent: Immunological Including Allergic: hypersensitivity delayed

TDLo (Intravenous-Human) 7.5 mg/kg/3 weeks-intermittent: Nutritional and Gross Metabolic - body temperature increase

TDLo (Intravenous-Human) 27 mg/kg/84 days-intermittent: Blood: granulocytopenia, changes in erythrocyte (RBC) count; Tumorigenic: active as anti-cancer agent

TDLo (Intravenous-Human) 7.5 mg/kg/3 weeks-intermittent: Blood: thrombocytopenia, changes in other cell count (unspecified); Skin and Appendages: hair

TDLo (Intravenous-Human-Woman) 17 mg/kg/12 weeks-intermittent: Skin and Appendages: dermatitis, other (after systemic exposure

TDLo (Intravenous-Human) 7 mg/kg/21 days-intermittent: Blood: granulocytopenia

TDLo (Intravenous-Human) 280 mg/kg/21 days-intermittent: Blood: granulocytopenia, leukopenia, thrombocytopenia

TDLo (Intravenous-Human) 13.5 mg/kg/6 weeks-intermittent: Peripheral Nerve and Sensation: sensory change involving peripheral nerve; Blood: changes in bone marrow (not otherwise specified

TDLo (Intravenous-Human) 7.5 mg/kg/3 weeks-intermittent: Gastrointestinal: hypermotility, diarrhea, nausea or vomiting; Blood: normocytic anemia

TDLo (Intravenous-Human) 13.3 mg/kg/6 weeks-intermittent: Peripheral Nerve and Sensation: sensory change involving peripheral nerve; Blood: thrombocytopenia, changes in other cell count (unspecified

TDLo (Intravenous-Human) 5.9 mg/kg/25 days-intermittent: Behavioral: somnolence (general depressed activity), normocytic anemia, changes in other cell count (unspecified

TDLo (Intravenous-Human) 44.23 mg/kg/36 weeks-intermittent: Immunological Including Allergic: uncharacterized

TDLo (Intravenous-Human) 2.96571428571429 mg/kg/15 days-intermittent: Gastrointestinal: nausea or vomiting; Blood: leukopenia, changes in leukocyte (WBC) count

TDLo (Intravenous-Human) 4.44857142857143 mg/kg/15 days-intermittent: Behavioral: somnolence (general depressed activity), anorexia (human

TDLo (Intravenous-Human) 5.19 mg/kg/15 days-intermittent: Liver: liver function tests impaired; Skin and Appendages: dermatitis, other (after systemic exposure); Nutritional and Gross Metabolic: changes in potassium

PACLITAXEL (continued):

TDLo (Intravenous-Human) 4.04 mg/kg/15 days-intermittent: Gastrointestinal: hypermotility, diarrhea; Liver: liver function tests impaired; Skin and Appendages: hair

TDLo (Intravenous-Human-Woman) 6.43 mg/kg: Peripheral Nerve and Sensation: paresthesis; Behavioral: muscle weakness

TDLo (Intravenous-Human-Woman) 3.47 mg/kg: Blood: changes in other cell count (unspecified)

TDLo (Intravenous-Human-Woman) 1.54 mg/kg: Lungs, Thorax, or Respiration: bronchiolar constriction; Immunological Including Allergic: other immediate (humoral): urticaria, allergic rhinitis, serum sickness; Nutritional and Gross Metabolic: body temperature decrease

TDLo (Intravenous-Human-Woman) 3.47 mg/kg: Behavioral: convulsions or effect on seizure threshold; Vascular: BP lowering not characterized in autonomic section; Lungs, Thorax, or Respiration: bronchiolar constriction

TDLo (Intravenous-Human-Woman) 3.47 mg/kg: Immunological Including Allergic: anaphylaxis

TDLo (Intravenous-Human-Woman) 4.5 mg/kg: Peripheral Nerve and Sensation: sensory change involving peripheral nerve; Cardiac: other changes; Gastrointestinal: nausea or vomiting

TDLo (Intravenous-Human-Woman) 4.5 mg/kg: Blood: thrombocytopenia, changes in other cell count (unspecified); Skin and Appendages: hair

TDLo (Intravenous-Human-Woman) 4.96 mg/kg: Peripheral Nerve and Sensation: paresthesis

TDLo (Intravenous-Human-Woman) 34 mg/kg/126 days-intermittent: Immunological Including Allergic: increase in cellular immune response; Immunological Including Allergic: increased immune response; Tumorigenic: active as anti-cancer agent

TDLo (Intravenous-Human-Woman) 93.3 mg/kg/48 weeks-intermittent: Blood: aplastic anemia; Musculoskeletal: other changes; Tumorigenic: active as anti-cancer agent

TDLo (Intravenous-Human-Woman) 240 mg/kg/28 days-intermittent: Peripheral Nerve and Sensation: sensory change involving peripheral nerve; Behavioral: somnolence (general depressed activity); Vascular: BP elevation not characterized in autonomic section

TDLo (Intravenous-Human-Woman) 240 mg/kg/28 days-intermittent: Gastrointestinal: nausea or vomiting; Blood: normocytic anemia, changes in cell count (unspecified)

TDLo (Intravenous-Human-Woman) 240 mg/kg/28 days-intermittent: Skin and Appendages: hair, nails; Immunological Including Allergic: hypersensitivity delayed

TDLo (Intravenous-Human-Woman) 240 mg/kg/28 days-intermittent: Musculoskeletal: other changes

TDLo (Intravenous-Human-Woman) 6 mg/kg/3 weeks-intermittent: Behavioral: somnolence (general depressed activity); Blood: changes in cell count (unspecified), changes in leukocyte (WBC) count

TDLo (Intravenous-Human-Woman) 6 mg/kg/3 weeks-intermittent: Skin and Appendages: dermatitis, other (after systemic exposure); Tumorigenic: active as anti-cancer agent

TDLo (Intravenous-Human-Woman) 8.5 mg/kg/21 days-intermittent: Blood: normocytic anemia, changes in other cell count (unspecified; Skin and Appendages: hair

TDLo (Intravenous-Human-Woman) 25.5 mg/kg/126 days-intermittent: Peripheral Nerve and Sensation: sensory change involving peripheral nerve; Blood: granulocytopenia; Skin and Appendages: hair

TDLo (Intravenous-Human-Woman) 17 mg/kg/12 weeks-intermittent: Blood: granulocytopenia; Tumorigenic: active as anti-cancer agent

TDLo (Intravenous-Human-Woman) 23.39 mg/kg/12 weeks-intermittent: Peripheral Nerve and Sensation: sensory change involving peripheral nerve; Blood: granulocytopenia; Skin and Appendages: nails

TDLo (Intravenous-Human-Woman) 23.59 mg/kg/12 weeks-intermittent: Gastrointestinal: nausea or vomiting; Blood: changes in other cell count (unspecified); Skin and Appendages: nails

TDLo (Intravenous-Human-Woman) 14.88 mg/kg/43 days-intermittent: Peripheral Nerve and Sensation - structural change in nerve or sheath

TDLo (Unreported-Human-Man) 30.9 mg/kg/12 weeks-intermittent: Skin and Appendages: dermatitis, other (after systemic exposure); Skin and Appendages: hair; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation

11. TOXICOLOGICAL INFORMATION (Continued)

TOXICITY DATA (continued):

PACLITAXEL (continued):
TDLo (Unreported-Human-Woman) 8.5 mg/kg/42 days-intermittent: Lungs, Thorax, or Respiration: cough, dyspnea; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation
TDLo (Unreported-Human) 17 mg/kg/12 weeks-intermittent: Skin and Appendages: dermatitis, other (after systemic exposure)
TDLo (Unreported-Human-Woman) 6.8 mg/kg/3 weeks-intermittent: Blood: hemorrhage
DNA damage (Human Lymphocyte) 0.02 mg/L/48 hours
Morphological transformation (Human Liver) 0.5 µmol/L/24 hours
Micronucleus test (Human Lymphocyte) 5 nmol/L/48H
Micronucleus test (Human Lymphocyte) 15 nmol/L/52 hours
Micronucleus test (Human Cells-Not Otherwise Specified) 3.13 µg/L/24 hours
Micronucleus test (Human Cells-Not Otherwise Specified) 0.625 mg/L/3 hours
DNA damage (Human Lymphocyte) 10 µmol/L/4 hours
DNA repair (Human Lymphocyte) 10 µmol/L/4 hours
DNA damage (Human Cells - not otherwise specified) 1 µmol/L/48 hours
DNA damage (Human Liver) 1 µmol/L/48 hours
Cytogenetic analysis (Human Lymphocyte) 0.003 mg/L/24 hours
Specific locus test (Human Cells-Not Otherwise Specified) 0.02 mg/L
Specific locus test (Human Cells-Not Otherwise Specified) 0.06 mg/L
Specific locus test (Human Cells-Not Otherwise Specified) 0.125 mg/L/3 hours
Specific locus test (Human Cells-Not Otherwise Specified) 0.0313 mg/L/48 hours
Specific locus test (Human Cells-Not Otherwise Specified) 0.012 mg/L/16 hours
Specific locus test (Human Cells-Not Otherwise Specified) 0.069 mg/L/16 hours

PACLITAXEL (continued):
Micronucleus test (Human Cells-Not Otherwise Specified) 3.16 µmol/L/3 hours
Micronucleus test (Subcutaneous-Mouse) 20 mg/kg
DNA damage (Rodent - Mouse Cells-Not Otherwise Specified) 1 mg/L/24 hours
DNA damage (Intraperitoneal-Rat) 1 mg/kg
Cytogenetic analysis (Hamster Lung) 80 µg/L
Cytogenetic analysis (Oral- Primate-Monkey) 7.5 mg/kg
Cytogenetic analysis (Oral-Insect-Drosophila Melanogaster) 0.01 mmol/L/6 hours
Cytogenetic analysis (Intravenous-Mouse) 1 mg/kg
Cytogenetic analysis (Intravenous-Primate-Monkey) 6 mg/kg/96 hours-continuous
Sex chromosome loss and Non-Disjunction (Mouse Lymphocyte) 0.75 mg/L/4 hours
Gene conversion and mitotic recombination (Oral-Insect-Drosophila Melanogaster) 0.01 mmol/L/6 hours
Specific locus test (Mouse Ascites Tumor) 10 µg/L/24 hours
Mutation in mammalian somatic cells (Mouse Cells-Not Otherwise Specified) 2.4 mg/L/4 hours
Micronucleus test (Mouse Cells-Not Otherwise Specified) 1 nmol/L/48 hours
Micronucleus test (Hamster Ovary) 0.07 µmol/L/24 hours
Micronucleus test (Intravenous-Mouse) 6 mg/kg/6 days
Micronucleus test (Mouse Cells-Not Otherwise Specified) 12.5 mg/L/4 hours
Micronucleus test (Mouse Cells-Not Otherwise Specified) 0.12 µmol/L
Micronucleus test (Mouse Cells-Not Otherwise Specified) 0.427 mg/L/24 hours
Micronucleus test (Intraperitoneal-Rat) 0.5 mg/kg
Micronucleus test (Hamster Ovary) 1 µmol/L/3 hours
Micronucleus test (Hamster Lung) 100 µg/L/24 hours

CARCINOGENIC POTENTIAL OF COMPONENTS: The following information is available for the active ingredient.

The carcinogenic potential of Vinorelbine Tartrate has not been studied.

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

DEHYDRATED ALCOHOL: ACGIH TLV-A3 (Animal Carcinogen with Unknown Relevance to Humans); MAK-5 (Substances with Carcinogenic and Genotoxic Effects, the potency of which is considered to be so low that, provided the MAK and BAT values are observed, no significant contribution to human cancer risk is to be expected.)

REPRODUCTIVE TOXICITY INFORMATION: There are no adequate and well-controlled studies of Paclitaxel in pregnant women. This product is rated Pregnancy Risk Category D (There is positive evidence of human fetal risk based on adverse reaction data from investigational or marketing experience or studies in humans, but potential benefits may warrant use of the drug in pregnant women despite potential risks.)

Mutagenicity: Paclitaxel has been shown to be clastogenic in vitro (chromosome aberrations in human lymphocytes) and in vivo (micronucleus test in mice). Paclitaxel was not mutagenic in the Ames test or the CHO/HGPRT gene mutation assay.

Embryotoxicity/Teratogenicity: Administration of Paclitaxel during the period of organogenesis to rabbits at doses of 3 mg/kg/day (about 0.2 the daily maximum recommended human dose on a mg/m^2 basis) caused embryo- and fetotoxicity, as indicated by intrauterine mortality, increased resorptions, and increased fetal deaths. Maternal toxicity was also observed at this dose. No teratogenic effects were observed at 1 mg/kg/day (about 1/15 the daily maximum recommended human dose on a mg/m^2 basis); teratogenic potential could not be assessed at higher doses due to extensive fetal mortality.

Reproductive Toxicity: Administration of Paclitaxel prior to and during mating produced impairment of fertility in male and female rats at doses equal to or greater than 1 mg/kg/day (about 0.04 the daily maximum recommended human dose on a mg/m^2 basis). At this dose, Paclitaxel caused reduced fertility and reproductive indices, and increased embryo- and fetotoxicity. It is not known whether the drug is excreted in human milk. Following intravenous administration of carbon 14-labeled Paclitaxel to rats on days 9 to 10 postpartum, concentrations of radioactivity in milk were higher than in plasma and declined in parallel with the plasma concentrations. Because many drugs are excreted in human milk and because of the potential for serious adverse reactions in nursing infants from Vinorelbine, nursing mothers should be advised of these effects and the appropriate action should be taken to prevent exposure.

ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, no ACGIH Biological Exposure Indices (BEIs) have been determined for any component of this product.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY IN SOIL: This product has not been tested for mobility in soil. The following information is available for the Dehydrated Alcohol component.

DEHYDRATED ALCOHOL: Using a structure estimation method based on molecular connectivity indices, the Koc can be estimated to be 1. According to a classification scheme, this estimated Koc value suggests that this compound is expected to have very high mobility in soil.

PERSISTENCE AND BIODEGRADABILITY: This product has not been tested for persistence or biodegradability. It is expected that some biodegradation will occur to this product; however, no specific information is known. The following information is available for the Dehydrated Alcohol component.

DEHYDRATED ALCOHOL: If released to the atmosphere, an extrapolated vapor pressure of 59.3 mm Hg at 25°C indicates that this compound will exist solely in the vapor phase. Vapor phase material is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 5 days. If released to soil, this compound is expected to have very high mobility based upon an estimated Koc of 1. Volatilization from moist soil surfaces is expected to be an important fate process based upon a Henry's Law constant of 5X10-6 atm-cu m/mole. This material may also volatilize from dry soils based upon it vapor pressure. Biodegradation is expected to occur rapidly in the environment based on numerous screening tests using different types of inocula and incubation periods. This compound was degraded with half-lives on the order of a few days using microcosms constructed with a low organic sandy soil and groundwater, indicating it is unlikely to be persistent in the environment. If released into water, this material is not expected to adsorb to suspended solids and sediment based upon the estimated Koc. Volatilization from water surfaces is expected to be an important fate process based upon this compound's Henry's Law constant. Estimated volatilization half-lives for a model river and model lake are 3 and 39 days, respectively. Hydrolysis and photolysis in sunlit surface waters are not expected since this compound lacks functional groups that are susceptible to hydrolysis or photolysis under environmental conditions.

BIO-ACCUMULATION POTENTIAL: This product has not been tested for bio-accumulation potential. The following information is available for the Dehydrated Alcohol component.

DEHYDRATED ALCOHOL: An estimated BCF of 3 was calculated, using a log Kow of -0.31 and a regression-derived equation. According to a classification scheme, this BCF suggests the potential for bioconcentration in aquatic organisms is low.

12. ECOLOGICAL INFORMATION (Continued)

ECOTOXICITY: This product may be harmful or fatal to contaminated plant and animal-life (especially if large quantities are released). This product has not been tested for aquatic toxicity. This product may be harmful or fatal to contaminated aquatic plant and animal life. The following data are available for the Dehydrated Alcohol and Citric Acid components.

CITRIC ACID:
LC_{50} (*Carcinus maenas* Green or European shore crab) 48 hour = 160 mg/L
LD_{100} (*Daphnia magna* giant water flea) = 120 mg/l long-time exposure in soft water
LD_{100} (goldfish) 894 mg/L, long-time exposure in hard water
Toxic (*Daphnia* water flea) = 100 mg/L
Toxic (goldfish) 4 hours = 894 ppm fresh water

DEHYDRATED ALCOHOL:
EC_{50} (*Chlorella pyrenoidosa* Green algae; growth inhibition) 48 hours = 9310 mg/L; static
EC_{50} (*Pimephales promelas* fathead minnows) 96 hours = 12.9 g/L

DEHYDRATED ALCOHOL (continued):
LC_{50} (*Salmo gairdnerii* Rainbow trout) 96 hours = 13,000 mg/L
LC_{50} (*Poecilia reticulata* Guppy) 24 hours = 12,500 mg/L
LC_{50} (*Artemia franchiscana* Brine shrimp) 96 hours = 7.00 mg/L; static
LC_{50} (*Leuciscus idus melanotus* Golden orfe) 48 hours = 8140 mg/L; static
LC_{50} (*Danio rerio* Zebrafish) 24 hours = >100 mg/L; static
LC_{50} (*Daphnia magna* Water flea) 48 hours = 9268-14221 mg/L; static, 24°C
LC_{50} (*Gammarus fasciatus* Scud) 96 hours = >100 mg/L; static
LC_{50} (*Oryzias latipes* Medaka) 48 hours = 1350 mg/L; static

OTHER ADVERSE EFFECTS: This product does not contain any component with known ozone depletion potential.

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.

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

WASTE TREATMENT/DISPOSAL METHODS: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. Waste containers should be handled with uncontaminated gloves. Reusable equipment should be decontaminated using 0.05M Boric acid solution adjusted to pH 9 with 10 N sodium hydroxide followed by a detergent wash and then clean water rinse or by using a bleach solution (triple wash) and a detergent solution followed by clean water rinse.

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

U.S. EPA WASTE NUMBER: Wastes of this product should be tested to see if they meet the criteria for D001, Waste Characteristic, Ignitability.

EUROPEAN WASTE CODES: Wastes from natal care, diagnosis, treatment, or prevention of disease in humans: cytotoxic and cytostatic medicines, 18-01-08

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS: This product is classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

UN Identification Number:	UN 1993
Proper Shipping Name:	Flammable liquids, n.o.s. (Ethyl Alcohol)
Hazard Class Number and Description:	3 (Flammable)
Packing Group:	II
Dot Label(s) Required:	Class 3 (Flammable)
Emergency Response Guidebook Number (2012):	127

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).

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 173.150(b)]: Limited quantities for Class 3, Packing Group II materials have inner packagings not over 1.0 L net capacity each, packed in strong outer packaging.

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 information below is applicable.

UN Identification Number:	UN 1993
Proper Shipping Name:	Flammable liquid, n.o.s. (Ethyl Alcohol)
Hazard Class Number and Description:	3 (Flammable)
Packing Group:	II
Hazard Label(s) Required:	Class 3 (Flammable)
Special Provisions:	16
Explosive Limit & Limited Quantity Index:	1
ERAP Index:	None
Passenger Carrying Ship Index:	None
Passenger Carrying Road or Rail Vehicle Index:	5
Marine Pollutant:	Not Applicable

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. (Ethyl Alcohol)
Hazard Class Number and Description:	3 (Flammable)
Packing Group:	II
Excepted Quantities:	E2

14. TRANSPORTATION INFORMATION (Continued)

INTERNATIONAL AIR TRANSPORT ASSOCIATION (continued):

Hazard Label(s) Required:	Class 3 (Flammable)
Passenger and Cargo Aircraft Packing Instruction:	353
Passenger and Cargo Aircraft Maximum Net Quantity per Pkg.:	5 L
Passenger and Cargo Aircraft Limited Quantity Packing Instruction:	Y343
Passenger and Cargo Aircraft Limited Quantity Maximum Net Quantity per Pkg.:	1 L
Cargo Aircraft Only Packing Instruction:	364
Cargo Aircraft Only Maximum Net Quantity per Pkg.:	60 L
Special Provisions:	A3
ERG Code:	3H

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

UN No.:	1993
Proper Shipping Name:	Flammable liquid, n.o.s. (Isopropanol)
Hazard Class Number:	3 (Flammable)
Packing Group:	II
Special Provisions:	274
Limited Quantities:	1 L
Excepted Quantities:	E2
Packing Instructions:	Instructions: P001, Provisions: None
IBC Information:	Instructions: IBC02, Provisions: None
Tanks:	Instructions: T7, Provisions: TP1, TP8, TP28
EmS:	F-E, S-E
Stowage Category:	Category B.

Marine Pollutant: No component is as a Marine Pollutant under UN criteria or is specifically listed in the MARPOL 73/78 Annex III.

UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE (UNECE): This product is classified by the United Nations Economic Commission for Europe to be dangerous goods. Refer to current regulations for all additional provisions other information not given here.

UN No.:	1993
Name and Description:	Flammable liquid, n.o.s. (Isopropanol)
Class:	3
Classification Code:	F1
Packing Group:	II
Labels:	3
Special Provisions:	274, 601, 640D
Limited Quantities:	1 L
Excepted Quantities:	E2
Packaging Instructions:	P001, IBC02, R001
Special Packing Provisions:	None
Mixed Packing Provisions:	MP19
Portable Tanks/Bulk Containers:	Instructions: T7; Special Provisions; TP1, TP8, TP28
Hazard Identification No.:	33

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

TRANSPORT IN BULK ACCORDING TO THE IBC CODE: Not applicable.

ENVIRONMENTAL HAZARDS: The active ingredient of this product can cause harm to aquatic organisms, according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN); the active ingredient is not a listed marine pollutant, under the to the IMDG Code and is not listed in Annex III under MARPOL 73/78.

15. REGULATORY INFORMATION

ADDITIONAL UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: The components of this product are not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

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 under Food and Drug Administration standards; it is not subject to requirements under TSCA.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): The Dehydrated Alcohol component is on the California Proposition 65 lists; however, this listing does applies only to Dehydrated Alcohol consumed as an alcoholic beverage and does not apply to workplace exposure. The Paclitaxel component is listed on the Proposition 65 lists. WARNING! This product contains a compound known to the State of California to cause developmental harm in both males and females.

CANADIAN REGULATIONS:

Canadian DSL Inventory Status: This product regulated by the Therapeutic Products Programme (TPP) of Health Canada and so it excepted 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.

15. REGULATORY INFORMATION (Continued)

CANADIAN REGULATIONS (continued):

Canadian WHMIS Classification and Symbol: 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: When formulated in a finished medicinal product for human use, this material is 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! FLAMMABILE LIQUID AND VAPOR. CYTOTOXIC AGENT. ALL EXPOSURE MUST BE MINIMIZED. MAY BE HARMFUL IF SWALLOWED, IN CONTACT WITH SKIN OR IF INHALED. MAY CAUSE FETAL HARM DURING PREGNANCY. MAY CAUSE ADVERSE FERTILITY EFFECTS IN MEN AND WOMEN. LIMITED EVIDENCE OF MUTAGENIC EFFECTS. MAY CAUSE ADVERSE EFFECTS ON IMMUNE AND BLOOD FORMING SYSTEMS. MAY CAUSE SEVERE ALLERGIC REACTION INCLUDING ANAPHYLACTOID REACTION BY INJECTION. This product should be administered under the supervision of a qualified physician experienced in the use of cancer chemotherapeutic agents. Avoid accidental injection. Avoid accidental ingestion. Avoid contact with skin, eyes, and clothing. Keep container closed. Use gloves, safety glasses, and appropriate respiratory and body protection. FIRST-AID: If swallowed, do not induce vomiting. Never give anything by mouth to an unconscious person. In case of contact, immediately flush skin with copious amounts of warm water for 20 minutes. Remove contaminated clothing and shoes. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention. IN CASE OF FIRE: Use water fog, dry chemical or CO_2, or alcohol foam. IN CASE OF SPILL: Sweep up or vacuum spilled product or absorb spilled liquid on appropriate sorbent materials. Decontaminate area with soapy water and triple rinse area. Place in a suitable container. Refer to SDS for additional information.

SPECIAL HANDLING AND DISPOSAL REQUIRED

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 67/548/EEC LABELING AND 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 OF COMPONENTS:

CLP Regulation (EC) 1272/2008:

Paclitaxel: This is a self-classification.

Classification: Reproductive Toxicity Category 1B, Germ Cell Mutagenicity Category 2, Adverse Effects on or via Lactation, Specific Target Organ Toxicity (Injection-Neurological, Immune, Central Nervous and Blood Forming Systems) Repeated Exposure Category 2

Hazard Statements: H360FD: May damage fertility. May damage the unborn child. H341: Suspected of causing genetic effects. H318: Causes serious eye damage. H362: May cause harm to breast-fed children. H372: Causes damages to organs (neurological, central nervous, peripheral nervous, immune, bone marrow and, reproductive systems) through prolonged or repeated exposure by injection.

Dehydrated Alcohol: The following is a Published Classification.

Classification: Flammable Liquid Category 2

Hazard Statements: H225: Highly flammable liquid and vapour.

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

67/548/EEC:

Paclitaxel: This is a self-classification.

Classification: Reproductive Toxicity Category 2, Germ Cell Mutagenicity Category 3, Harmful

Hazard Statements: R61: May cause harm to the unborn child. R60: May impair fertility. R68: Possible risk of irreversible effects. R48/20/22: Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. R64: May cause harm to breast-fed babies.

Dehydrated Alcohol: The following is a Published Classification.

Classification: Highly Flammable

Risk Phrases: R11: Highly Flammable

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

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.

REVISION DETAILS: New.

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

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