TEVA PARENTERAL MEDICINES

Material Safety Data Sheet

Vinorelbine Tartrate Injection

1. PRODUCT IDENTIFICATION

Product Name	Vinorelbine Tartrate Injection
Product Use	Medical Treatment; Cytotoxic Antineoplatic Agent
Manufacturer	Teva Parenteral Medicines, Inc.
Address	11 Hughes Irvine, CA 92618-1902
Chemtrec Emergency No.	1-800-424-9300 (United States) 1-202-483-7617 (International Collect)
Business Phone	1-800-729-9991
Website Address	http://www.newsicor.com
Common Names	Navelbine®
Chemical Name	3',4'-didehydro-4'-deoxy-C'-norvincaleukoblastine [R-R*,R*)-2,3-dihydroxybutanedioate (1:2) (salt)]
Chemical Formula	$C_{45}H_{54}N_4O_8 \cdot 2C_4H_6O_6$
Chemical Family	Semi-synthetic Vinca Alkaloid
How Supplied	10 mg/mL solution in a 2mL vial 50 mg/5mL solution in a 5mL vial
Date of Preparation:	December 11, 2007

2. COMPOSITION AND INGREDIENTS

CHEMICAL NAME	CAS#	Wt%	EXPOSURE LIMITS IN AIR				
			ACGIH		OSHA		Other
			TLV	STEL	PEL	STEL	
Vinorelbine Tartrate	125317-39-7	1	NE	NE	NE	NE	0.5 ug/m3*
Water for Injection	7732-18-5	Balance	NE	NE	NE	NE	NE

NE - Not Established C - Ceiling Limit * Innovator's Exposure Limit

NOTE: All WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1 format

CHEMTREC NUMBER: Use only in the event of a chemical emergency involving a spill, leak, fire, exposure or accident involving this drug.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: Material is a clear, colorless to pale yellow, odorless liquid. Cytotoxic Agent. Causes severe eye and skin irritation. May cause damage to the bone marrow, nervous and reproductive systems. Harmful to the fetus. May cause allergic reactions. Avoid contact with eyes, skin and clothing. Avoid exposure during pregnancy and while breastfeeding. Do not taste or swallow. Wash thoroughly after handling.

Symptoms of Overexposure by Route of Exposure: This material is intended for intravenous injection under the supervision of physicians. Fatal if given intrathecally.

Inhalation: Inhalation of significant amounts of the product is not anticipated to occur because of the small size of individual containers.

Contact with Skin or Eyes: Contact may cause irritation. Effects may include stinging, watering, redness and eye damage. Vinca alkaloids do not cause a direct chemical burn of eye tissue, but interfere with the reproduction of the eye epithelium which occurs continuously. The result can be a delayed burn. While very painful, all cases have recovered completely without any loss of eye function. Skin contact can cause redness, burning and damage. May cause an allergic reaction on the skin.

Ingestion: Ingestion is not an anticipated route of occupational exposure. Symptoms similar to those identified under injection may occur.

Injection: Local redness and pain are the primary symptoms of accidental injection in an occupational setting. Medical personnel are not anticipated to experience over-exposures to the therapeutic doses of this product. However, effects including chills, fever, nausea, vomiting, severe gastrointestinal distress, unusual bleeding, severe loss of blood pressure, cardiac irregularities, breathing difficulties, neurological effects including numbness, tingling and weakness of extremities, bone marrow suppression with decreased blood cells and hair loss may occur. See package insert for other adverse reactions associated with therapeutic doses of this product.

Health Effects or Risks From Exposure **(An explanation in lay terms):**

Acute: The primary health effects anticipated in an occupational setting include irritation of eyes and skin as well as redness and local swelling after accidental injection. In case of over-exposure by injection, effects such as chills, fever, nausea, vomiting, severe gastrointestinal distress, unusual bleeding, severe loss of blood pressure, cardiac irregularities, breathing difficulties, neurological effects including numbness, tingling and weakness of extremities, bone marrow suppression with decreased blood cells and hair loss may occur.

Cancer: No long-term cancer studies were identified for vinorelbine tartrate (see Section 11 for additional information).

Chronic: Based on animal data, Vinorelbine Tartrate® is considered a potential developmental and reproductive toxicant (see Section 11).

Target Organs: Potential hazard to the bone marrow and nervous system (see Section 11).

Pre-Existing Medical Conditions: Pre-existing reproductive, bone marrow and nervous system disorders may be aggravated by exposure to this material.

4. FIRST-AID MEASURES

Skin Exposure: Remove contaminated shoes and clothing and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops, seek medical attention.

Eye Exposure: Immediately move victim away fro exposure and into fresh air. If irritation or redness develops, flush eyes with clean water and seek immediate medical attention. For direct contact, immediately hold eyelids apart and flush the affected eye(s) with clean water for at least 20 minutes. Seek immediate medical attention.

4. FIRST-AID MEASURES cont.

Inhalation: If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion: If swallowed, seek emergency medical attention. If victim is drowsy or unconscious and vomiting, place on the left side with the head down and DO NOT give anything by mouth. If not vomiting and professional advice is not available, DO NOT induce vomiting. If possible, do not leave victim unattended and observe closely for adequacy of breathing.

Note to physicians: Vinorelbine Tartrate® is a potent cytotoxic antineoplatic drug. It should only be administered under the supervision of physicians experienced in cancer chemotherapy.

Victims of chemical exposure must be taken for medical attention. Take a copy of the MSDS to the physician or health professional with victim. Physicians should refer to Section 11 (Toxicological Information) as well as the Physicians Desk Reference for additional treatment information.

5. FIRE-FIGHTING MEASURES

Flash Point: Not flammable Autoignition Temperature: Not applicable

Flammable Limits (in air by volume, %): Lower: Not applicable Upper: Not applicable

Fire Extinguishing Equipment: Use extinguishing agent suitable for type of surrounding fire.

Water Spray: OK	Carbon Dioxide: OK	Halon: OK
Foam: OK	Dry Chemical: OK	Other: Any "ABC" Class

Unusual Fire and Explosion Hazards: When heated to decomposition, this product may emit toxic fumes.

Explosion Sensitivity to Mechanical Impact: Not sensitive.
Explosion Sensitivity to Static Discharge: Not sensitive.

Special Fire Fighting Procedures.: For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self-contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate immediate hazard area and keep unauthorized personnel out. Contain spill if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Cool equipment exposed to fire with water, if it can be done with minimal risk.

NFPA HAZARD CLASS:	Health:	2 (Moderate)
	Flammability:	0 (Least)
	Reactivity:	0 (Least)

6. ACCIDENTAL RELEASE MEASURES

Spill and Leak Response:

For small releases of this product, wear latex or nitrile gloves and safety glasses. Absorb spilled liquid and rinse area thoroughly with soap and water.

For large or uncontrolled releases, stay away from spill. Isolate immediate hazard area and keep unauthorized personnel out. Contain spill if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8). Prevent spilled material from entering sewers, storm drains, other unauthorized treatment drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Spilled material may be absorbed into an appropriate absorbent material. Notify appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended.

7. HANDLING and STORAGE

VINORELBINE TARTRATE IS A CYTOTOXIC AGENT. ALL WORK PRACTICES MUST BE DESIGNED TO REDUCE HUMAN EXPOSURE TO THE LOWEST LEVEL.

Work 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 the product. Wash hands thoroughly after handling.

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. Precautions should be taken during the following activities:

- Withdrawal of needles from drug vials.
- Drug transfers using syringes and needles or filter straws.
- Expulsion of air from drug-filled syringes.

Storage and Handling Practices: Employees must be trained to properly use the product. Ensure vials are properly labeled. Store only in approved containers. Protect form light. Keep away from all sources of ignition and any incompatible materials or conditions (see Section 10). Store at 2-8°C (36-46°F). Do not freeze.

Protective Practices During Maintenance of Contaminated Equipment: When cleaning non-disposable equipment, wear latex or nitrile gloves (double gloving is recommended), goggles, and lab coat. Wash equipment with soap and water. All needles, syringes, vials and other 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.

Respiratory Protection: Not normally required for routine, medical administration of this product. A NIOSH certified air-purifying respirator with a type 100 filter may be used under conditions where airborne concentrations are expected to be excessive. Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positive pressure air supplied respirator if there is potential for uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Eye Protection: Approved eye protection to safeguard against potential eye contact, irritation or injury is recommended. Depending on conditions of use, a face shield may be necessary.

Hand Protection: Use latex, nitrile, or rubber gloves. Check gloves for leaks. Wash hands before and after using gloves.

Body Protection: No special body protection required for routine, medical administration of this product. Wear lab coat, gown, or smock, as appropriate for procedure.

Product Preparation Instructions for Medical Personnel: Follow standard procedure for handling pharmaceutical materials and recommendations presented on the Package Insert.

9. PHYSICAL and CHEMICAL PROPERTIES

Relative Vapor Density (air = 1):	ND	Evaporation Rate (n-BuAc=1):	>1
Specific Gravity (water = 1):	Approx. 1	Melting/Freezing Point:	Not applicable
Solubility in Water:	Soluble	Boiling Point:	Approx. 100°C
Vapor Pressure, mm Hg @ 25°C.	ND	pH:	Approx. 3.5
Odor Threshold: ND			
Appearance and Color: Clear, colorless to pale yellow, odorless liquid			

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ND = No Data

10. STABILITY and REACTIVITY

Stability: Stable under normal conditions of storage and handling.

Materials With Which Substance is Incompatible: This product is generally compatible with other common materials in a medical facility. This product is incompatible with oxidizers.

Hazardous Polymerization: Will not occur.

Hazardous Combustion Products: Heat may cause product to decompose, destroying the product or producing toxic fumes.

11. TOXICOLOGICAL INFORMATION

Toxicity Data: The following information is for Vinorelbine Tartrate, the active ingredient

IV LD50(mouse) = 72 mg/m^2 IP LD50(mouse) = 26 mg/kg
IP LD50(mouse) = 78 mg/m^2

Suspected Cancer Agent: No long-term cancer studies were identified for vinorelbine tartrate. It is not listed as carcinogenic by NTP, IARC or OSHA.

Irritancy of Product: This product is irritating to contaminated skin, eyes and other tissues.

Sensitization to the Product: This product may cause allergic reactions in sensitive individuals.

Target Organ(s): Causes bone marrow suppression (decreased white blood cell count and platelets, neutropenia and thrombocytopenia) and peripheral neuropathy.

Reproductive Toxicity Information: Listed below is information concerning the effects of Vinorelbine Tartrate on human and animal reproductive systems. This material is classified as a Pregnancy Category D (Positive Evidence of Risk).

Mutagenicity: Vinorelbine tartrate was positive in several short-term screening tests for genetic damage (e.g., altered chromosome number and structure in vivo) and negative in others (e.g., Ames bacterial cell mutagenicity test).

Embryotoxicity/Teratogenicity/Reproductive Toxicity: Vinorelbine tartrate was negative for fertility impairment when administered to rats at a dose of 9 mg/m^2 once weekly or 4.2 mg/m^2 every other day. Biweekly administration to rats for 13 or 26 weeks at 2.1 or 7.2 mg/m^2 caused decreased spermatogenesis and decreased prostate/seminal vesicle secretion.

Vinorelbine tartrate was positive for fetal harm (e.g., reduced fetal weight, delayed skeletal ossification) in mice and rabbits after a single dose of 9 and 5.5 mg/m^2, respectively. In a Japanese study for birth defects in rats, increased skeletal defects were found at 0.5 mg/kg/day but not at 0.22 mg/kg/day.

ACGIH Biological Exposure Indices: Currently there are no Biological Exposure Indices (BEIs) associated with the components of this product.

12. ECOLOGICAL INFORMATION

All work practices must be aimed at eliminating environmental contamination.

Environmental Stability: It is anticipated that this compound will decompose into a variety of organic compounds.

Effect of Materials on Plants or Animals: This product may be harmful to contaminated plant and animal life. See Section 11 (Toxicological Information) for additional information.

Effect of Chemicals on Aquatic Life: This product may be harmful to aquatic plant and animal life in contaminated bodies of water, especially if released in large quantities.

13. DISPOSAL CONSIDERATIONS

Preparing Wastes for Disposal: This material, if discarded as produced, is not a RCRA "listed" hazardous waste. Use resulting in chemical or physical change or contamination may subject it to regulation as a hazardous waste. Along with properly characterizing all waste materials consult state and local regulations regarding the proper disposal of this material.

U.S. EPA Waste Number: None

14. TRANSPORTATION INFORMATION

This Materials is not Hazardous as Defined by 49 CFR 172.101 by the U. S. Department of Transportation

Proper Shipping Name: Not applicable
Hazard Class Number and Description: Not applicable
UN Identification Number: Not applicable
Packing Group: Not applicable
DOT Label(s) Required: Not applicable
North American Emergency Response Guidebook Number (1996): Not applicable
MARINE POLLUTANT: No component of this product is listed as a Marine Pollutant (49 CFR 172.101, Appendix B)

Transport Canada Transportation of Dangerous Goods Regulations: Not applicable

15. REGULATORY INFORMATION

U.S. 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 II of the Superfund Amendments and Reauthorization Act.

U.S. SARA Threshold Planning Quantity: Not applicable

U.S. TSCA Inventory Status: Vinorelbine Tartrate® is a "drug" as defined by the Federal Food, Drug and Cosmetic Act and is therefore not a chemical substance under TSCA.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): No component of this product is on the California Proposition 65 list.

Other U.S. Federal Regulations: Based on this product's use, the requirements of the OSHA Bloodborne pathogen Standard (29 CFR 1910.1030) are applicable.

CANADIAN REGULATIONS:

Canadian DSL/NDSL Status: Vinorelbine Tartrate® is regulated by the Food and Drug Administration of Health Canada and is therefore exempt from the requirements of CEPA.

ANSI Labeling (Based on 129.1, Provided to Summarize Occupational Exposure Hazards): DANGER! Cytotoxic Agent. Severe Eye or Skin Irritant. Harmful to the Fetus. May Cause Damage to the Bone Marr, Nervous and Reproductive Systems. May Cause Allergic Reactions. Vinorelbine Tartrate® should be administered under the supervision of a qualified physician. Avoid over-exposure. Avoid contact with eyes, skin and clothing. Avoid exposure during pregnancy and while breast feeding. Avoid accidental injection. Do not eat, drink or smoke when handling. Do not taste or swallow. Wash thoroughly after handling. Clean up spills promptly.

16. OTHER INFORMATION

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