TEVA PARENTERAL MEDICINES

Material Safety Data Sheet

Carboplatin Injection

1. PRODUCT IDENTIFICATION

Product Name	Carboplatin Injection
Product Use	Medical Treatment; Ovarian Carcinoma
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	Paraplatin®
Chemical Name	Platinum, diammine [1,1-cyclobutanedicarboxylato(2-)-0,0`]-(SP-4-2)
Chemical Formula	$C_6H_{12}N_2O_4Pt$
Chemical Family	Antineoplastic belonging to the group of medicines known as alkylating agents
How Supplied	5 mL solution in a 6 mL polymer vial 15 mL solution in a 25 mL polymer vial 45 mL solution in a 50 mL polymer vial
Date of Preparation:	November 20, 2005

2. COMPOSITION AND INGREDIENTS

CHEMICAL NAME	CAS#		EXPOSURE LIMITS IN AIR				
		Wt%	ACGIH		OSHA		Other
			TLV	CEIL	PEL	CEIL	
Carboplatin (exposure limit for Platinum, soluble salts as Platinum)	41575-94-4	1	0.002 mg/m3	NE	0.002 mg/m3	NE	0.002 mg/m3*
Water (for injection)	7732-18-5	99	NE	NE	NE	NE	NE

NE - Not Established C - Ceiling Limit *NIOSH REL

NOTE: All WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1 – 1998 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 solution. Toxic if injected or swallowed. Eye irritant. May cause damage to the kidneys, bone marrow, blood, liver, nervous and gastrointestinal systems. Harmful to the fetus. May cause allergic skin and/or respiratory reactions. Avoid contact with eyes, skin and clothing. Avoid exposure during pregnancy and while breastfeeding. Do not taste or swallow. Wash thoroughly after handling.

3. HAZARD IDENTIFICATION cont…

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

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 swelling of the eyes and redness and a burning sensation.

Ingestion: Ingestion is not an anticipated route of occupational exposure. However, the active ingredient, Carboplatin, is toxic if swallowed. 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 decreased blood platelets, granulocytes and white blood cells, fever, anemia, nausea, vomiting, abdominal pain, diarrhea, constipation, peripheral neuropathy, visual disturbances, change in taste, abnormal renal and liver function tests, decreased serum electrolytes, rash, hives, redness, itching, hearing loss, vision changes, bronchospasms and decreased blood pressure may occur. Severe injection overexposure may be fatal. 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 anemia, nausea, vomiting, abdominal pain, diarrhea and constipation may occur.

Cancer: Carboplatin has not been tested in laboratory animals. However, it is considered possibly carcinogenic (see Section 11).

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

Target Organs: Potential hazard to the kidneys, bone marrow, blood, liver and nervous systems (see Section 11).

Pre-Existing Medical Conditions: Pre-existing kidney, bone marrow, blood, liver and nervous systems disorders may be aggravated by exposure to this material.

4. FIRST-AID MEASURES

Skin Exposure: Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops and persists, seek medical attention.

Eye Exposure: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water and seek medical attention.

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.

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: Non-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: No unusual fire or explosion hazards are expected.

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

CARBOPLATIN 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. Keep away from sources of ignition and any incompatible materials or conditions (see Section 10). Store at 15-30°C (59-86°F). Protect from light.

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 95 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):	ND
Specific Gravity (water = 1):	ND	Melting/Freezing Point:	0°C (32°F))
Solubility in Water:	Sparingly	Boiling Point:	100°C (212°F)
Vapor Pressure, mm Hg @ 25°C.	ND	pH:	5-7 (1% solution)
Odor Threshold: ND			
Appearance and Color: Clear, colorless to straw colored solution, free of visible particles			

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. Contact with aluminum may lead to the formation of a platinum precipitate.

Hazardous Polymerization: Will not occur.

Hazardous Combustion Products: Oxides of carbon and nitrogen and platinum-containing compounds with possible carcinogenic potential.

11. TOXICOLOGICAL INFORMATION

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

Oral LD50(rat) =343 mg/kg IV LD50(rat) = 61 mg/kg
IP LD50(mouse) = 150 mg/kg IV LD50(mouse) = 89.36 mg/kg
SubQ LD50(rat) = 72 mg/kg IV (LD50)(dog) = 31.2 mg/kg

Suspected Cancer Agent: The carcinogenic potential of Carboplatin has not been examined in test animals; however, compounds with similar mechanisms of action (e.g., cytotoxic) and mutagenicity profiles have been reported to be carcinogenic. It is not listed as carcinogenic by NTP, IARC or OSHA.

Irritancy of Product: This product is expected to be irritating to contaminated skin, eyes and other tissues. The active ingredient is irritating to the eyes and the skin.

Sensitization to the Product: Histamine-mediated dermatological reactions, including anaphylaxis have been observed with exposure to this cytotoxic agent.

Target Organ(s): In the rat model, intravenous administration of Carboplatin at a dose of 70 mg/kg for 2 weeks resulted in changes in lung weight, changes in spleen weight, and changes in platelet count. In mice given an intraperitoneal dose of 32 mg/kg/day for 5 days, leucopenia was observed. Dogs given a dose of 140 mg/kg for a period of 26 weeks developmed abnormal changes in bone marrow and leukocyte (white blood cell) count.

Reproductive Toxicity Information: Listed below is information concerning the effects of Carboplatin on human and animal reproductive systems. This material is classified as a Pregnancy Category D (Positive evidence of risk). Currently, there have been no studies in pregnant women.

Mutagenicity: Carboplatin is reportedly mutagenic in both in vitro and in vivo mutagenesis assays, and the mouse lymphoma assay.

Embryotoxicity/Teratogenicity: In male and female rats, a dose of up to 4 mg/kg/day produced suppression of body weight in adults; when the dose was increased to 6 mg/kg/day, a corresponding increase in congenital and/or skeletal anomalies was observed. Doses of 24 mg/kg/day administered to rats between the sixth and ninth days of pregnancy were associated with specific developmental abnormalities of the central nervous system, musculoskeletal system, and body wall. Carboplatin is presently listed as a Proposition 65 developmental toxin by the state of California

ReproductiveToxicity: In vivo studies of mice and rats have indicated that Carboplatin impairs spermatogenesis by damaging spermatogonia and Sertolli cells. Doses of 24 mg/kg/day administerd to rats between the sixth and ninth days of pregnancy were associated with an increased incidence of pre-implantation mortality and fetal toxicity. The addition of Carboplatin to semen samples collected from healthy men has produced evidence of sperm membrane damage at levels of 30 and 60 mg/ml.

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" or "characteristic" 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: Carboplatin 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): This product contains a chemical known to the State of California to cause developmental effects - Carboplatin.

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: Carboplatin 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. Accidental Injection or Ingestion Can Be Fatal. Can Cause Irritation. Carboplatin should be administered under the supervision of a qualified physician. Avoid over-exposure. Avoid contact with eyes, skin and clothing. Avoid accidental injection. Do not eat, drink or smoke when handling Carboplatin. Do not taste or swallow. Wash thoroughly after handling. Clean up spills promptly.

16. OTHER INFORMATION

Issue Date: 11/20/03
Previous Issue Date: None

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