

**1. Product and Company Identification**

Product name	HERCEPTIN Vials 440 mg	
Product code	SAP-10086840	
Use	- pharmaceutical active substance (antineoplastic) - active substance in Herceptin	*1 *1
Company information	Enquiries: Hoffmann-La Roche Inc. 340 Kingsland Street USA-Nutley, N.J. 07110-1199 United States of America Phone 001-973/235 50 00 E-Mail info.sds@roche.com US Emergency phone: (800)-827-6243 US Chemtrec phone: (800)-424-9300	
Synonyms	- HERCEPTIN lyophilized Vials 440 mg	
*1 referring to:	Trastuzumab	

2. Hazard identification**Emergency Overview**

Form	lyophilized powder
Color	white to slightly yellow
Hazard Overview	- May cause allergic reactions. - Can cause birth defects

HERCEPTIN Vials 440 mg

Potential Health Effects	<ul style="list-style-type: none">- Exposure: Inhalation, Ingestion, Skin contact, Eye contact- Target Organs: Cardiovascular system, gastrointestinal system, Central nervous system, Hematopoietic/blood system, Immune System, respiratory system- Acute Effects: May cause allergic reactions., This material has not been tested as a whole; therefore, the information described below is based on one or more of its ingredients., May cause central nervous system effects., Signs and symptoms may include headache, dizziness, drowsiness, fatigue and lack of muscular coordination., May cause gastrointestinal effects., Signs and symptoms may include nausea, vomiting, diarrhea, constipation, cramps, and loss of appetite., May cause "flu-like" symptoms such as fever, fatigue, chills, headache, nausea and muscular pain.- Chronic Effects: May cause cardiovascular effects., Signs and symptoms may include increase or decrease in blood pressure, irregular heartbeat, chest pains and cardiac arrest., May cause respiratory effects., Signs and symptoms may include difficulty in breathing, coughing, wheezing, irritation (inflammation) and respiratory arrest., May cause blood system effects.- Carcinogenicity: not listed by NTP, IARC or OSHA
GHS Classification	no classification and labelling according to GHS
Additional Health Information	<ul style="list-style-type: none">- Reproduction Toxicity: May cause birth defects. Since this material may affect the developing fetus, females planning to have a child and pregnant women should exercise caution regarding exposure.- It is also advisable for nursing mothers to exercise caution regarding exposure.

3. Composition/Information on ingredients

Characterization recombinant humanised monoclonal antibody (Trastuzumab) with excipients

Ingredients	Concentration
Trastuzumab CAS: 180288-69-1	51.4 %
Trehalose dihydrate CAS: 6138-23-4	46.7 %
L-Histidine CAS: 71-00-1	0.74 %
L-Histidine hydrochloride monohydrate CAS: 5934-29-2	1.15 %
Polysorbate 20 CAS: 9005-64-5	0.01 %

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4. First-aid measures

Eye contact	- rinse immediately with tap water for 10 minutes - open eyelids forcibly
Skin contact	- remove contaminated clothes, wash affected skin with water and soap - do not use any solvents
Inhalation	- remove the casualty to fresh air and keep him/her calm - in the event of symptoms get medical treatment
Note to physician	- treat symptomatically

5. Fire-fighting measures

Suitable extinguishing media	- adapt extinguishing media to surrounding fire conditions
Flash point (liquid)	not applicable
Protection of fire-fighters	- precipitate gases/vapours/mists with water spray

6. Accidental release measures

Methods for cleaning up	- collect solids (avoid dust formation) and hand over to waste removal - flush afterwards with plenty of water
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7. Handling and storage

Handling

Note	- the solution of Herceptin for infusion diluted in polyvinylchloride or polyethylene bags containing 0.9% Sodium Chloride Injection, USP, should be stored at 2-8°C (36-46°F) for no more than 24 hours prior to use - A vial of Herceptin reconstituted with BWFI, as supplied, is stable for 28 days after reconstitution when stored refrigerated at 2° to 8°C (36° to 46°F). A vial of Herceptin reconstituted with unpreserved SWFI (not supplied) should be used immediately.
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Storage

Storage conditions	- 2 - 8 °C - protected from light - do not freeze following reconstitution or dilution
Validity	- 2 to 8 °C, in the unopened original container, see "best use before" date stated on the label

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8. Exposure controls/Personal protection

Engineering Measures - see 7.

Monitoring

Threshold value (Roche) air - Category 1 (Roche Group Directive K1, Annex 3): IOEL \geq 100 $\mu\text{g}/\text{m}^3$ *1

Personal protective equipment

Respiratory protection - Respiratory protection is recommended as a precaution to minimize exposure. Effective engineering controls are considered to be the primary means to control worker exposure. Respiratory protection should not substitute for feasible engineering controls.
- respiratory protection not necessary during normal operations
- breathing apparatus in case of aerosol mist formation

Hand protection - protective gloves (eg made of neoprene, nitrile or butyl rubber)

Eye protection - safety glasses

*1 referring to: Trastuzumab

9. Physical and chemical properties

Color white to slightly yellow

Form lyophilized powder

pH value 5.4 to 6.6 *2

*2 referring to: Herceptin Vials (2% Trastuzumab solution with excipients)

10. Stability and reactivity

Stability - does not contain any antimicrobial preservative; therefore, care must be taken to ensure the sterility of the prepared solution *2
- do not dilute with glucose since there cause aggregation of the protein *2
- do not freeze the reconstituted solution *2

Note - do not shake the solution, formation of foam *2

*2 referring to: Herceptin Vials (2% Trastuzumab solution with excipients)

11. Toxicological information

Acute toxicity - MTD > 94 mg/kg (i.v., mouse) *1
- MTD > 47 mg/kg (i.v., Rhesus monkey) *1
- LD₅₀ > 5'110 mg/kg (oral, rat) *3

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	<ul style="list-style-type: none"> - TD₁₀ 16'000 mg/kg (oral, rat) *4 	
Sensitization	<ul style="list-style-type: none"> - anaphylactic reactions may occur following the intravenous application of proteins; rare cases of hypersensitivity have been described *1 	
Reproductive toxicity	<ul style="list-style-type: none"> - parenteral administration to pregnant women can cause fetal harm *1 	
Note	<ul style="list-style-type: none"> - Trastuzumab is a humanized monoclonal antibody that targets selectively the extracellular domain of the human epidermal growth factor receptor (HER2) *1 - elimination half-life (after multiple dose): 1.7 to 32.8 days *1 - Herceptin administration (in therapeutic doses) can result in the development of ventricular dysfunction and congestive heart failure. *5 - side effect(s) during therapy: dyspnea, hypotension, tachycardia, bronchospasm, wheezing, reduced oxygen saturation *5 	
*1 referring to:	Trastuzumab	
*3 referring to:	L-Histidine	
*4 referring to:	Trehalose dihydrate	
*5 referring to:	Diluted Herceptin infusion solution (approx. 0.06% Trastuzumab)	
12. Ecological information		
Ready biodegradability	<ul style="list-style-type: none"> - globular proteins are generally well biodegradable *1 	
Ecotoxicity	<ul style="list-style-type: none"> - monoclonal antibodies are proteins with highly specific affinity to a certain antigen; therefore, no appreciable ecotoxic potential is to be expected *1 	
*1 referring to:	Trastuzumab	
13. Disposal considerations		
Waste from residues	<ul style="list-style-type: none"> - observe local/national regulations regarding waste disposal - drain very small quantities into wastewater treatment plant 	
RCRA waste	<ul style="list-style-type: none"> - not regulated under RCRA 	
14. Transport information		
Note	<ul style="list-style-type: none"> - not classified by transport regulations, proper shipping name non-regulated 	
15. Regulatory information		
TSCA Status	<ul style="list-style-type: none"> - FDA Exemption - not on inventory 	

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Reporting Requirements

- The United States Environmental Protection Agency (USEPA) has not established a Reportable Quantity (RQ) for releases of this material.
- In New Jersey, report all releases which are likely to endanger the public health, harm the environment or cause a complaint to the NJDEPE Hotline (1-609-292-5560) and to local officials.
- State and local regulations vary and may impose additional reporting requirements.

16. Other information

Edition documentation

- changes from previous version in sections 11

*1 referring to:

Trastuzumab

The information in this safety data sheet is based on current scientific knowledge. It should not be taken as expressing or implying any warranty concerning product characteristics.