SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name: HERCEPTIN(R) Vials (440 mg)
Product code: SAP-10086840
Synonyms: HERCEPTIN lyophilized Vials 440 mg

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use:
- pharmaceutical active substance (antineoplastic) *1
- active substance in Herceptin *1

1.3. Details of the supplier of the safety data sheet

Company information:
Enquiries:
Genentech, Inc.
1 DNA Way
South San Francisco
USA-CA 94080
United States of America

Phone: 001-(650) 225-1000
E-Mail: info.sds@roche.com
US Chemtrec phone:
(800)-424-9300

Local representation:

1.4. Emergency telephone number

Emergency telephone number:
US Chemtrec phone: (800)-424-9300

*1 referring to: Trastuzumab

SECTION 2: Hazards identification

Classification of the substance or mixture / Label elements

GHS Classification: no classification and labelling according to GHS

Other hazards

Note:
- no information available
SECTION 3: Composition/information on ingredients

Characterization
recombinant humanised monoclonal antibody (Trastuzumab) with excipients

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trastuzumab</td>
<td>51.4 %</td>
</tr>
<tr>
<td>CAS: 180288-69-1</td>
<td></td>
</tr>
<tr>
<td>Trehalose dihydrate</td>
<td>46.7 %</td>
</tr>
<tr>
<td>CAS: 6138-23-4</td>
<td></td>
</tr>
<tr>
<td>L-Histidine</td>
<td>0.74 %</td>
</tr>
<tr>
<td>CAS: 71-00-1</td>
<td></td>
</tr>
<tr>
<td>L-Histidine hydrochloride monohydrate</td>
<td>1.15 %</td>
</tr>
<tr>
<td>CAS: 5934-29-2</td>
<td></td>
</tr>
<tr>
<td>Polysorbate 20</td>
<td>0.01 %</td>
</tr>
<tr>
<td>CAS: 9005-64-5</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1. Description of 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

4.2. Most important symptoms and effects, both acute and delayed
Note - no information available

4.3. Indication of any immediate medical attention and special treatment needed
Note to physician - treat symptomatically

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media - adapt extinguishing media to surrounding fire conditions
Flash point (liquid) - not applicable
5.2. Special hazards arising from the substance or mixture

Specific hazards - no particular hazards known

5.3. Advice for firefighters

Protection of fire-fighters - precipitate gases/vapours/mists with water spray

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions - no special precautions required

6.2. Environmental precautions

Environmental protection - no special environmental precautions required

6.3. Methods and material for containment and cleaning up

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

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Suitable materials - glass

7.2. Conditions for safe storage, including any incompatibilities

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Threshold value (Roche air) - IOEL (Internal Occupational Exposure Limit): 0.1 mg/m³

'1
8.2. Exposure controls

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Color
white to slightly yellow

Form
lyophilized powder

pH value
5.4 to 6.6

9.2. Other information

Note
- no information available

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

SECTION 10: Stability and reactivity

10.1. Reactivity

Note
- no information available

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

Note
- no information available
10.4. Conditions to avoid

Conditions to avoid
- warming

10.5. Incompatible materials

Note
- no information available

10.6. Hazardous decomposition products

Note
- do not shake the solution, formation of foam

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

SECTION 11: Toxicological information

11.1. Information on toxicological effects

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
- TDlo 16'000 mg/kg (oral, rat) *4

Sensitization
- anaphylactic reactions may occur following the intravenous application of proteins; rare cases of hypersensitivity have been described *1

Reproductive toxicity
- parenteral administration to pregnant women can cause fetal harm *1

Note
- infusions should not be administered through IV line containing dextrose solutions
- 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.
- side effect(s) during therapy: dyspnea, hypotension, tachycardia, bronchospasm, wheezing, reduced oxygen saturation *5

Potential Health Effects
- Exposure: Inhalation, Ingestion, Skin contact, Eye contact
- Carcinogenicity: formulation not listed by NTP, IARC or OSHA

*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)
**SECTION 12: Ecological information**

12.1. Toxicity

Ecotoxicity
- monoclonal antibodies are proteins with highly specific affinity to a certain antigen; therefore, no appreciable ecotoxic potential is to be expected

12.2. Persistence and degradability

Ready biodegradability
- globular proteins are generally well biodegradable

12.3. Bioaccumulative potential

Note: no information available

12.4. Mobility in soil

Note: no information available

12.5. Results of PBT and vPvB assessment

Note: no information available

12.6. Other adverse effects

Note: no information available

*1 referring to: Trastuzumab

**SECTION 13: Disposal considerations**

13.1. Waste treatment methods

Waste from residues
- observe local/national regulations regarding waste disposal
- drain very small quantities into wastewater treatment plant

**SECTION 14: Transport information**

Note: not classified by transport regulations, proper shipping name non-regulated

**SECTION 15: Regulatory information**

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

TSCA Status
- FDA Exemption - not on inventory
### 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.

### SECTION 16: Other information

**Edition documentation**
- changes from previous version in sections 2, 5, 6, 8, 10, 11