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

1.1. Product identifier

Product name: HERCEPTIN(R) Vials (150 mg)
Product code: SAP-10046108
Synonyms: HERCEPTIN(R) Lyophilized Vials (150 mg)

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

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

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>
<th>GHS-Classification (pure ingredient)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trastuzumab 180288-69-1</td>
<td>51.3 %</td>
<td></td>
</tr>
<tr>
<td>L-Histidine hydrochloride monohydrate</td>
<td>1.2 %</td>
<td></td>
</tr>
<tr>
<td>5934-29-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L-Histidine 71-00-1</td>
<td>0.7 %</td>
<td></td>
</tr>
<tr>
<td>Trehalose dihydrate 6138-23-4</td>
<td>46.6 %</td>
<td></td>
</tr>
<tr>
<td>Polysorbate 20 9005-64-5</td>
<td>0.2 %</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 at least 20 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
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 pale yellow
Form lyophilized powder
pH value 5.4 to 6.6 *2

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 *2
- do not dilute with glucose since there cause aggregation of the protein *2
- do not freeze the reconstituted solution *2

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

*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
- TD_{10} 16’000 mg/kg (oral, rat) *3
- LD_{50} > 15’000 mg/kg (oral, rat) *4

Local effects - no information available

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

Mutagenicity - no information available

Carcinogenicity - no information available

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

STOT-single exposure - no information available

STOT-repeated exposure - no information available

Aspiration hazard - no information available

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. *5
- side effect(s) during therapy: dyspnea, hypotension, tachycardia, bronchospasm, wheezing, reduced oxygen saturation *5

Note - infusions should not be administered through IV line containing dextrose solutions
HERCEPTIN(R) Vials (150 mg)

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

*1 referring to: Trastuzumab
*3 referring to: Trehalose dihydrate
*4 referring to: L-Histidine
*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
- readily biodegradable
  65 % BOD/ThOD, 14 d
  (Manometric Respirometry Test, OECD No. 301 F)
- readily biodegradable
  87 % BOD/ThOD, 14 d
  (Manometric Respirometry Test, OECD No. 301 F)

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
*6 referring to: Trastuzumab 2.4% solution with excipients
### 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 as Dangerous Good according to the Dangerous Goods Regulations, proper shipping name non-regulated

### SECTION 15: Regulatory information

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

<table>
<thead>
<tr>
<th>TSCA Status</th>
<th>- FDA Exemption - not on inventory</th>
</tr>
</thead>
</table>
| 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 and to local officials.  
|                  | - State and local regulations vary and may impose additional reporting requirements. |

### SECTION 16: Other information

**Note**

- Please note this Safety Data Sheet for the bulk product does not apply for the finished, packaged medicinal product intended for the final user.

| Edition documentation | - changes from previous version in sections 1, 3 |

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.