# **MATERIAL SAFETY DATA SHEET**

Date Issued: November 14, 2006 Version: 4.1
Supersedes: August 8, 2006

## Section 1 – Product and Company Identification

| | |
|---|---|
| Product Name: | Rituxan® |
| Chemical Name: | Recombinant chimeric mouse/human monoclonal antibody to CD20 antigen |
| Chemical Family: | Protein |
| Company Name: | Genentech, Inc. |
| Company Address: | 1 DNA Way, South San Francisco, CA 94080 |
| Company Phone: | (650) 225-1000 |
| Emergency Phone: | (800) 821-8590 |

## Section 2 – Hazards Identification

### Emergency Overview

Rituxan® is considered hazardous per the criteria under the OSHA Hazard Communication Standard (29 CFR 1910.1200). Adverse health effects have been observed in patients following intravenous (IV) injection of therapeutic doses for treatment of non-Hodgkin's lymphoma, and for use in treating certain types of rheumatoid arthritis. It derives its biotherapeutic benefit from a monoclonal antibody (rituximab), a protein that is not well absorbed by inhalation or by contact with eyes, skin, or mucous membranes. Although the health effects of occupational exposure to this product are not fully known or characterized, no adverse effects are anticipated as a result of occupational or incidental exposure. This product is a clear, colorless liquid.

For more product information see Section 11 or visit www.gene.com.

### Routes of Exposure

Direct contact with eyes, skin, or mucous membranes is the possible primary route of occupational exposure. No adverse health effects through these routes are expected to occur in occupational exposure conditions due to the large size of rituximab (a full length monoclonal antibody with a molecular weight of ~145,000 Daltons) and its poor potential for absorption.

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## Section 3 – Composition/Information on Ingredients

| Component(s) | CAS Number |
|---|---|
| Rituximab | 174722-31-7 |
| Sodium Citrate | 6132-04-3 |
| Polysorbate 80 | 9005-65-6 |
| Sodium Chloride | 7647-14-5 |

Formula (drug substance): Recombinant chimeric mouse/ human monoclonal antibody to CD20 antigen

Synonyms (drug substance): Rituximab, MabThera® IDEC-C2B8

## Section 4 – First Aid Measures

**Eye/Skin Contact**

Immediately flush eyes thoroughly with water or wash skin for at least 5 minutes as a prudent chemical hygiene practice. Report exposure to supervisor.

## Section 5 – Fire Fighting Measures

**Flammability/Explosivity**

Not flammable or explosive. No special fire fighting measures.

## Section 6 – Accidental Release Measures

Take proper precaution to minimize exposure by using appropriate personal protective equipment. If material is released or spilled, soak up material with absorbent material and wash spill area thoroughly with soap and water. Dispose of collected material in accordance with applicable waste disposal regulations.

## Section 7 – Handling and Storage

Refrigeration (2-8°C, 36-46°F) is advised to maintain longer pharmacological activity. Protect from sunlight. Avoid agitation.

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## Section 8 – Exposure Control and Personal Protective Equipment

### Skin Protection

As a prudent chemical hygiene practice, wear protective equipment that minimizes the potential for skin contact, such as latex gloves and lab coat. Wash hands and other potentially exposed areas immediately after handling material.

### Eye Protection

As a prudent chemical hygiene practice, use safety glasses with side shields.

### Other

Clean all protective equipment after use.

## Section 9 – Physical and Chemical Properties

| | |
|---|---|
| Molecular Weight | ~145,000 Daltons |
| pH: | 6.5 |
| Boiling Point (degrees C): | ~100 |
| Melting Point | Not applicable |
| Vapor Pressure: | Nil |
| Solubility in Water: | Soluble |
| Evaporation Rate: | Equal to water |
| Appearance: | Clear, colorless liquid |
| Specific Gravity: | ~ 1 |
| Vapor Density: | No data available |
| Percent Volatile: | Nil |

## Section 10 – Stability and Reactivity

Stability: Stable
Hazardous Polymerization: Will not occur
Hazardous Decomposition Products: None expected

## Section 11 – Toxicological Information

### Eye

No data available

### Skin

No data available

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**Systemic**

**Acute**
No data available

**Chronic**
No data available

**Reproductive and Developmental Toxicity**
An embryo-fetal developmental toxicity study was performed on pregnant cynomolgus monkeys. Animals were administered rituximab via the intravenous route during early gestation (organogenesis period; post-coitum days 20 through 50). Rituximab was administered as loading doses on post-coitum days 20, 21 and 22, at 15, 37.5 or 75 mg/kg/day, and then weekly on post-coitum days 29, 36, 43 and 50, at 20, 50 or 100 mg/kg/week. The 100 mg/kg/week dose resulted in exposures of 0.8-fold a human 2 g dose based on AUC. Although rituximab has been shown to cross the monkey placenta, there was no evidence of teratogenicity under the conditions of the experiment. However, there are no adequate and well-controlled studies in pregnant women.

**Carcinogenicity and Mutagenicity**
No long term animal studies have been performed to establish the carcinogenic or mutagenic potential of Rituxan®.

**Medical Conditions Aggravated by Exposure**
None known or reported.

**Clinical/Human Studies**
Adverse health effects that have been observed in patients following intravenous (IV) injection of therapeutic doses for treatment of non-Hodgkin's lymphoma, and for use in treating certain types of rheumatoid arthritis include fatal infusion reactions, Tumor Lysis Syndrome (TLS), and severe mucocutaneous reactions. For the complete description of warnings, precautions, and adverse reactions please refer to the Genentech web site at www.gene.com.

**Occupational Exposure Limit**
None currently established by OSHA, NIOSH, ACGIH, or Genentech.

## Section 12 – Ecological Information

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**Persistence and Degradability**
This product is protein based and will rapidly degrade in the environment.

**Aquatic Toxicity**
No data available

## Section 13 – Disposal Considerations

Dispose of waste residues according to prescribed federal, state, and local guidelines.

## Section 14 – Transportation Information

**Hazard Class**
Not regulated as per U.S. DOT or IATA

**UN Number**
Not assigned as per U.S. DOT or IATA

## Section 15 – Regulatory Information

**EUROPEAN UNION (EU) RISK AND SAFETY PHRASES**
Not established

Not listed by NTP, IARC or OSHA as a carcinogen. Not listed under California Proposition 65.

## Section 16 – Other Information

No additional information.

The above information is offered in good faith and with the belief that it is accurate. While efforts are made to provide useful information relating to handling, in the event of an adverse incident associated with this product, this Material Safety Data Sheet (MSDS) is not, and is not intended to be, a substitute for consultation with appropriately trained personnel.