



Revision Number: 4

Epogen[®] Safety Data Sheet

Date Issued 12-Feb-2013

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERSTANDING

1.1 Product identifier

Product Name: Epogen
Common Name: Epoetin alpha
Chemical Name: Not Applicable
Synonyms: Recombinant erythropoietin; Epoetin alfa

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

Recommended Use: Pharmaceutical
Uses advised against: No information available

Manufacturer:

Amgen Inc.
One Amgen Center Drive
Thousand Oaks, California 91320-1799
1-805-447-7233
1-805-447-1000

Emergency Telephone Number:

Chemtrec
NORTH AMERICA 1-800-424-9300,
INTERNATIONAL 1-703-527-3887

2. HAZARDS IDENTIFICATION

Emergency Overview

Pharmaceutical product intended for research and development, clinical and manufacturing purposes only. Product contains epoetin alfa, a recombinant form of erythropoietin. Dosage form contents may pose a health hazard only if exposure occurs to contents, e.g., after spill or leak. Repeated overexposure in manufacturing or from a significant spill may potentially cause effects seen in patients administered the drug such as increased hematocrit and blood pressure. Avoid inhalation, skin contact, eye contact, and ingestion. Does not meet GHS classification criteria and therefore is not classified.

2.1 - Classification of the drug substance or mixture (drug product in final form, not applicable) REGULATION (EC) No 1272/2008

Not classified

Classification according to EU Directives 67/548/EEC or 1999/45/EC

For the full text of the R phrases mentioned in this Section, see Section 16

2.2 Label elements

Not classified



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2.3 Other Hazards No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Ingredients: Proprietary information

Chemical Name: Not Applicable
CAS-No: 113427-24-0

Single-dose, Preservative-free Vial: Each 1 mL of solution contains 2000, 3000, 4000 or 10,000 Units of Epoetin alfa with:

	CAS Number:	Amount
Albumin (human)	70024-90-7	2.5 mg
Sodium citrate	68-04-2	5.8 mg
Sodium chloride (NaCl)	7647-14-5	5.8 mg
Citric acid in Water for Injection, USP	77-92-9	0.06 mg

Single-dose, Preservative-free Vial: 1 mL (40,000 Units/mL). Each 1 mL of solution contains 40,000 Units of Epoetin alfa with:

	CAS Number:	Amount
Albumin (human)	70024-90-7	2.5 mg
Sodium citrate	68-04-2	5.8 mg
Sodium chloride (NaCl)	7647-14-5	5.8 mg
Citric acid in Water for Injection, USP	77-92-9	0.06 mg

Multidose, Preserved Vial: 2 mL (20,000 Units, 10,000 Units/mL). Each 1 mL of solution contains 10,000 Units of Epoetin alfa with:

	CAS Number:	Amount
Albumin (human)	70024-90-7	2.5 mg
Sodium citrate	68-04-2	1.3 mg
Sodium chloride (NaCl)	7647-14-5	8.2 mg
Citric acid	77-92-9	0.11 mg
Benzyl Alcohol as a preservative in Water for Injection, USP	100-51-6	1%

Multidose, Preserved Vial: 1 mL (20,000 Units/mL). Each 1 mL of solution contains 20,000 Units of Epoetin alfa with:

	CAS Number:	Amount
Albumin (human)	70024-90-7	2.5 mg
Sodium citrate	68-04-2	1.3 mg
Sodium chloride (NaCl)	7647-14-5	8.2 mg
Citric acid	77-92-9	0.11 mg
Benzyl Alcohol as a preservative in Water for Injection, USP	100-51-6	1%



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4. FIRST AID MEASURES

4.1 Description of first-aid measures

Eye Contact:	In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Skin Contact:	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Consult a physician if necessary.
Inhalation:	Move to fresh air. If symptoms persist, call a physician.
Ingestion:	If symptoms persist, call a physician. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.
Notes to Physician:	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Flammable Properties:	Not applicable/aqueous solution.
Extinguishing Media:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special hazards arising from the substance or mixture

Hazardous Combustion Products: None

5.3 Advice for firefighters

Protective Equipment and Precautions for Firefighters:	As in any fire, wear self-contained breathing apparatus pressure-demand, NIOSH (approved) and full protective gear.
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6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Spill Procedures:	If material is released or spilled, cordon off spill area. Take proper precautions to minimize exposure by using appropriate personal protective equipment in cleaning up a spill. If in powder form, wet down spilled material to minimize airborne dispersion. Soak up material with absorbent e.g., paper towels, and wash spill area thoroughly with appropriate cleaning materials. Dispose of collected material in accordance with applicable waste disposal regulations. Avoid release to the environment.
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7. HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Handling and Storage: Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke in work areas. Use adequate ventilation to minimize exposure. Wash hands, face and other potentially exposed areas immediately after handling this material. Remove contaminated clothing prior to entering eating areas. Clean protective equipment thoroughly after each use. Store in a well ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limit: No exposure guidelines established by ACGIH, NIOSH or OSHA. Amgen recommends an occupational exposure limit (OEL) of 30 µg/m³ as an 8-hour time weighted average over a 40-hour work week. The OEL is designed as an acceptable airborne concentration of a substance for which it is believed that workers may be repeatedly exposed day after day without adverse health effects. Epogen[®] has been classified per Amgen's Hazard Classification System as an Occupational Exposure Band 3 compound (20 µg/m³ - 100 µg/m³).

Engineering Controls: When practicable, handle material in enclosed processes or in processes with effective local exhaust ventilation or within a chemical hood.

8.2 Exposure controls

Personal Protective Equipment

Eye/face Protection: Wear safety glasses with side shields, chemical splash goggles, or safety glasses with side shields and a full-face shield to prevent contact with eyes. The choice of protection should be based on the job activity and potential for exposure to the eyes and face.

Skin Protection: Use gloves or other appropriate personal protective equipment if skin contact with formulation is possible. Wear lab coat or other protective over garment if splashing is possible. The choice of protection should be based on the job activity and potential for skin contact.

Respiratory Protection: When possible, handle material in enclosed processes or containers. If it is properly handled with effective local exhaust ventilation or containment, respiratory protection may not be needed. For procedures involving larger quantities or dust/aerosol generating procedures such as weighing or a large transfer of liquids, an air-purifying respirator with NIOSH approval for dusts and mists may be needed.

Other: Wash hands, face and other potentially exposed areas after handling material (especially before eating, drinking or smoking). Clean protective equipment thoroughly after each use.

8.3 Environmental exposure controls

Environmental Exposure Controls Avoid release to the environment.



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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear colorless
Physical State:	Liquid
Molecular Weight:	epoetin alfa has a MW of approximately 30,400 Daltons
Odor:	No information available
Odor Threshold:	No information available
pH:	Single-dose, Preservative-free Vial: pH 6.9 ± 0.3 Multidose, Preserved Vial: pH 6.1 ± 0.3
Melting Point:	Not applicable
Boiling point	100 °C / 212 °F
Flash Point:	Not applicable
Evaporation Rate:	No information available
Lower explosive limit:	No information available
Upper explosive limit:	No information available
Vapor Pressure:	No information available
Vapor Density (air = 1):	Not applicable
Relative density:	No information available
Water Solubility:	No information available
Partition Coefficient (log Kow):	No information available
Viscosity:	No information available

10. STABILITY AND REACTIVITY

10.1 Reactivity	No information available
10.2 Chemical stability	Stable
10.3 Possibility of hazardous reactions	No information available
10.4 Conditions to avoid	No Information available
10.5 Incompatible materials	No information available
10.6 Hazardous decomposition products	No information available
10.7 Other information	None



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11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Toxicity:	No information available
Skin corrosion/irritation:	No information available
Serious eye damage/eye irritation:	No information available
Respiratory or skin sensitization:	No information available
Germ cell mutagenicity:	Even though this does not meet GHS classification, the following data is available: Not genotoxic based on a battery of in vitro and in vivo studies.
Carcinogenicity:	No information available
Reproductive toxicity:	Even though this does not meet GHS classification, the following data is available: Epogen [®] when administered intravenously in animal reproductive and developmental toxicity studies at clinically relevant doses, adverse fetal effects have occurred.
STOT - single exposure:	Even though this does not meet GHS classification, the following data is available: Epogen [®] oral, intravenous, and intramuscular LD50 in rats and mice is greater than 20,000 Units/kg since there were no deaths or signs of toxicity at this dose. Epogen [®] was well-tolerated in dogs and rats following single IV doses up to 20,000 or 8,000 Units/kg respectively. Increases in hematocrit, hemoglobin, and red blood cells (expected pharmacological effects of Epogen [®]) were seen at doses as low as 800 Units/kg.
STOT - repeated exposure:	Even though this does not meet GHS classification, the following data is available: Epogen [®] fourteen-day to 1 year studies in dogs and rats via the IV or IP route resulted in increases in hematocrit, hemoglobin, red blood cells, and reticulocytes at doses as low as 10 Units/kg. All toxicities observed in these species were related to exaggerated pharmacology and extremely high hematocrit.
	Epogen [®] is generally well-tolerated in humans. The most common adverse events in patients treated with Epogen [®] were hypertension, headache, arthralgias, and nausea. In patients administered Epogen [®] , rare but serious adverse events (e.g., hypertension, thromboembolic events (heart attack, stroke), seizure, and pure red blood cell aplasia).
Aspiration Hazard:	No information available



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12. ECOLOGICAL INFORMATION

12.1 Toxicity

Ecotoxicity effects: No information available

12.2 Persistence and degradability

Persistence/Degradability: No information available

12.3 Bioaccumulative potential

Bioaccumulation/ Accumulation: No information available

12.4 Mobility in soil

Mobility in Environmental Media: No information available

12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment: No information available

12.6 Other adverse effects

Other Adverse Effects: No information available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste Disposal Method: Dispose of any waste according to prescribed federal, state, local and competent authority guidelines.

14. TRANSPORT INFORMATION

DOT Not regulated by U.S. DOT or IATA



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15. REGULATORY INFORMATION

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

International Inventories

TSCA:	-
EINECS/ELINCS	-
DSL/NDSL	-
PICCS:	-
ENCS:	-
CHINA:	-
AICS:	-
KECL:	-

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
PICCS - Philippines Inventory of Chemicals and Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
AICS - Australian Inventory of Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances

State Regulations

California Proposition 65: This product does not contain any Proposition 65 chemicals.

15.2 Chemical safety assessment

No CSA has been conducted.



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16. OTHER INFORMATION

Text of R phrases mentioned in Section 2

No information available

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The above information is based on data available to us and is believed to be correct. Since the information may be applied under conditions beyond our control and with which we may be unfamiliar, we do not assume any responsibility for the results of its use and all persons receiving it must make their own determination of the effects, properties and protections, which pertain to their particular conditions.

No representation, warranty, or guarantee, express or implied (including a warranty of fitness or merchantability for a particular purpose), is made with respect to the materials, the accuracy of this information, the results to be obtained from the use thereof, or the hazards connected with the use of the material. Caution should be used in the handling and use of the material because it may be biologically active.