

1. Identification

Product identifier	rHuman Interleukin 4	
Other means of identification		
Catalog number	1311714	
Recommended use	Specified quality tests and assay use only.	
Recommended restrictions	Not for use as a drug. Not for administration to humans or animals.	
Manufacturer/Importer/Supplier/Distributor information		
Company name	U. S. Pharmacopeia	
Address	12601 Twinbrook Parkway Rockville MD 20852-1790 US	
Telephone	RS Technical Services	301-816-8129
Website	www.usp.org	
E-mail	RSTECH@usp.org	
Emergency phone number	CHEMTREC within US & Canada	1-800-424-9300
	CHEMTREC outside US & Canada	+1 703-527-3887

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
OSHA hazard(s)	Not classified.	
Label elements		



Signal word	Warning
Hazard statement	Causes skin irritation. Causes serious eye irritation.
Precautionary statement	
Prevention	Wash thoroughly after handling. Wear protective gloves. Wear eye/face protection.
Response	If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Storage	Not available.
Disposal	Not available.
Hazard(s) not otherwise classified (HNOC)	Not classified.

3. Composition/information on ingredients

Mixture

Hazardous components

Chemical name	Common name and synonyms	CAS number	%
Sodium Chloride		7647-14-5	81.8
Dibasic Sodium Phosphate		7558-79-4	11.6
Monobasic Potassium Phosphate		7778-77-0	2
Potassium Chloride		7447-40-7	2

Non-hazardous components

Chemical name	Common name and synonyms	CAS number	%
rHuman Interleukin 4		N/A	2.6

4. First-aid measures

Inhalation	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.
Most important symptoms/effects, acute and delayed	Not available.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Remove from exposure. Remove contaminated clothing. For treatment advice, seek guidance from an occupational health physician or other licensed health-care provider familiar with workplace chemical exposures. In the United States, the national poison control center phone number is 1-800-222-1222. If person is not breathing, give artificial respiration. If breathing is difficult, give oxygen if available. Persons developing serious hypersensitivity (anaphylactic) reactions must receive immediate medical attention.

5. Fire-fighting measures

Suitable extinguishing media	Water spray, dry chemical, carbon dioxide, or foam as appropriate for surrounding fire and materials.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	No unusual fire or explosion hazards noted.
Special protective equipment and precautions for firefighters	Wear suitable protective equipment.
Fire-fighting equipment/instructions	As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing equipment and protective clothing.
Specific methods	Cool containers exposed to flames with water until well after the fire is out.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of dust from the spilled material. Ensure adequate ventilation. Wear appropriate personal protective equipment.
Methods and materials for containment and cleaning up	Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid the generation of dusts during clean-up. For waste disposal, see section 13 of the SDS. Wash spill site.

7. Handling and storage

Precautions for safe handling	As a general rule, when handling USP Reference Standards, avoid all contact and inhalation of dust, mists, and/or vapors associated with the material. Clean equipment and work surfaces with suitable detergent or solvent after use. After removing gloves, wash hands and other exposed skin thoroughly.
Conditions for safe storage, including any incompatibilities	Store in tight container as defined in the USP-NF. This material should be handled and stored per label instructions to ensure product integrity.

8. Exposure controls/personal protection

Biological limit values	No biological exposure limits noted for the ingredient(s).
Exposure guidelines	No exposure standards allocated.
Appropriate engineering controls	Airborne exposure should be controlled primarily by engineering controls such as general dilution ventilation, local exhaust ventilation, or process enclosure. Local exhaust ventilation is generally preferred to general exhaust because it can control the contaminant at its source, preventing dispersion into the work area. An industrial hygiene survey involving air monitoring may be used to determine the effectiveness of engineering controls. Effectiveness of engineering controls intended for use with highly potent materials should be assessed by use of nontoxic surrogate materials. Local exhaust ventilation such as a laboratory fume hood or other vented enclosure is recommended, particularly for grinding, crushing, weighing, or other dust-generating procedures.

Individual protection measures, such as personal protective equipment

Eyeface protection	Safety glasses with sideshields are recommended. Face shields or goggles may be required if splash potential exists or if corrosive materials are present. Approved eye protection (e.g., bearing the ANSI Z87 or CSA stamp) is preferred. Maintain eyewash facilities in the work area.
Skin protection	
Hand protection	Chemically compatible gloves. For handling solutions, ensure that the glove material is protective against the solvent being used. Use handling practices that minimize direct hand contact. Employees who are sensitive to natural rubber (latex) should use nitrile or other synthetic nonlatex gloves. Use of powdered latex gloves should be avoided due to the risk of latex allergy.
Other	For handling of laboratory scale quantities, a cloth lab coat is recommended. Where significant quantities are handled, work clothing may be necessary to prevent take-home contamination.
Respiratory protection	Where respirators are deemed necessary to reduce or control occupational exposures, use NIOSH-approved respiratory protection and have an effective respirator program in place (applicable U.S. regulation OSHA 29 CFR 1910.134).
Thermal hazards	Not available.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance	White powder.
Physical state	Solid.
Form	Powder.
Odor	Odorless.
Odor threshold	Not available.
pH	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.

Vapor density	Not available.
Relative density	Not available.
Solubility in water	Soluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Chemical family	Cytokines.

10. Stability and reactivity

Reactivity	No reactivity hazards known.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	None known.
Incompatible materials	Lithium. Bromine trifluoride. Strong oxidizing agents.
Hazardous decomposition products	NaOx. Cl-. POx. K2O. Irritating and/or toxic fumes or gases. Emits toxic fumes under fire conditions.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Based on available data, the classification criteria are not met.
Inhalation	Due to lack of data the classification is not possible.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.

Symptoms related to the physical, chemical, and toxicological characteristics Nausea. Vomiting. Diarrhea. Headache. Cramps. Weakness. Irritability. Tiredness. Dizziness. Thirst. Ringing in ears. Convulsions. Low blood pressure. Fever. Confusion. Seizures. Flu symptoms. Chest pain. Irregular heartbeat. Skin rash. Flushing. Muscle pain. Joint pain. Nasal congestion. Shortness of breath.

Delayed and immediate effects of exposure Respiratory failure. Coma.

Medical conditions aggravated by exposure High blood pressure. Pulmonary edema. Kidney impairment. Impaired cardiac function. Hypoproteinemia. Hyponatremia.

Acute toxicity

Components	Species	Test Results
Dibasic Sodium Phosphate (CAS 7558-79-4)		
Acute		
Oral		
LD50	Rat	17 g/kg
Monobasic Potassium Phosphate (CAS 7778-77-0)		
Acute		
Dermal		
LD50	Rabbit	> 4640 mg/kg
Oral		
LD50	Mouse	1700 mg/kg
Potassium Chloride (CAS 7447-40-7)		
Acute		
Oral		
LD50	Guinea pig	2500 mg/kg
	Mouse	383 mg/kg
	Rat	2600 mg/kg
Sodium Chloride (CAS 7647-14-5)		
Acute		
Oral		
LD50	Mouse	4000 mg/kg
	Rat	3000 mg/kg
Other		
LD50	Mouse	2602 mg/kg
Skin corrosion/irritation	Causes skin irritation.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
Local effects		
Potassium Chloride	Eye irritancy test Result: Mild irritation Species: Rabbit	
Dibasic Sodium Phosphate	Eye irritation test (Draize) Result: Mild irritation Species: Rabbit	
Sodium Chloride	Irritancy Result: Moderate; mild Species: Rabbit Organ: Eye Irritancy Result: Moderate; mild Species: Rabbit Organ: Skin	

Local effects

Dibasic Sodium Phosphate

Skin irritation test (Draize)

Result: Mild irritation

Species: Rabbit

Respiratory sensitization

Due to lack of data the classification is not possible.

Skin sensitization

Due to lack of data the classification is not possible.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Sodium chloride produced DNA damage in mammalian assays employing mouse lymphocytes, induced unscheduled DNA synthesis in rats, and caused DNA damage in hamster ovaries. Tests in *Saccharomyces cerevisiae* and *Escherichia coli* were also positive. However, the overall importance of these findings is questionable because these studies used very high sodium levels that would tend to disrupt the cellular osmotic balance and DNA microenvironment, especially in the in vitro studies. [EPA 2003]

Mutagenicity

Monobasic Potassium Phosphate

In vitro assays in *Saccharomyces cerevisiae* and *Salmonella typhimurium*

Result: Negative

Carcinogenicity

Due to lack of data the classification is not possible.

This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

Potassium Chloride

1820 mg/kg/day Long-term carcinogenicity study, administered in diet

Result: Negative

Species: Rat

Test Duration: 2 years

Reproductive toxicity

Based on available data, the classification criteria are not met.

No adverse developmental effects of excessive sodium chloride intake or injection have been reported in human pregnancies, but it may worsen gestational high blood pressure.

Reproductivity

Potassium Chloride

235 mg/kg/day Developmental study

Result: No fetotoxic or teratogenic effects

Species: Mouse

Monobasic Potassium Phosphate

282 mg/kg Reproductivity and development

Result: No maternal toxicity or teratogenicity

Species: Rat

Potassium Chloride

310 mg/kg/day Developmental study

Result: No fetotoxic or teratogenic effects

Species: Rat

Monobasic Potassium Phosphate

320 mg/kg Reproductivity and development

Result: No maternal toxicity or teratogenicity

Species: Mouse

Developmental study in chicken embryos

Result: No teratogenicity

Specific target organ toxicity - single exposure

Based on available data, the classification criteria are not met.

Specific target organ toxicity - repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

12. Ecological information**Ecotoxicity****Components****Species****Test Results**

Monobasic Potassium Phosphate (CAS 7778-77-0)

Aquatic*Acute*

Crustacea

LC50

Zebra mussel (*Dreissena polymorpha*)

116 - 159 mg/l, 24 hours

Sodium Chloride (CAS 7647-14-5)

Aquatic

Crustacea

EC50

Water flea (*Daphnia magna*)

340.7 - 469.2 mg/l, 48 hours

Fish

LC50

American eel (*Anguilla rostrata*)

0 - 27260 mg/l, 96 hours

Persistence and degradability

No data is available on the degradability of this product.

Bioaccumulative potential

Not available.

Mobility in soil

Not available.

Other adverse effects

Not available.

13. Disposal considerations

Disposal instructions	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations.
Local disposal regulations	Not available.
Hazardous waste code	Not available.
Waste from residues / unused products	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as a hazardous material by DOT.

IATA

Not regulated as a dangerous good.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code No information available.

15. Regulatory information

US federal regulations CERCLA/SARA Hazardous Substances - Not applicable.

All components are on the U.S. EPA TSCA Inventory List.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

SARA 311/312 Hazardous chemical No

Other federal regulations

Safe Drinking Water Act (SDWA) Not regulated.

Food and Drug Administration (FDA) Not regulated.

US state regulations California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other information, including date of preparation or last revision

Issue date	05-28-2013
Revision date	07-13-2015
Version #	03
Further information	Not available.
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Revision Information	Hazard(s) identification: <INDENT>Response First-aid measures: General information Toxicological information: Symptoms related to the physical, chemical, and toxicological characteristics