



Material Safety Data Sheet

Product Name: Human TGF-beta 1 Quantikine ELISA Kit

Reviewed on: 09 Sept 2011

1. Identification of Substance:

- Other means of identification: **Catalog Number: DB100B, SB100B, PDB100B**
Components: Microplate, Conjugate (contains Proclin 300), Standard (contains Proclin 300), Assay Diluent (Proclin 300), Calibrator Diluent (contains Proclin 300), Wash Buffer, Color Reagent A, Color Reagent B (contains Tetramethylbenzidine) and Stop Solution (contains Hydrochloric acid).
- GHS product identifier: NA
- Application of the substance / the preparation: For Research Use Only
- Manufacturer/Supplier:
R&D Systems Inc.
614 McKinley Place N.E.
Minneapolis, MN 55413
USA
1-800-328-2400
- Emergency information: In case of a chemical emergency, spill, fire, or exposure, call R&D Systems at (612) 379-2956 or (800)-343-7475. In Europe call +44(0)1235-529449.

2. Hazard Identification:

- Classification: Regulation (EC) No. 1272/2008 [CLP/GHS]
Some components indicated above contain Proclin 300: Skin Sens. 1; H317 – May cause an allergic skin reaction.
- Signal Word: WARNING
- Precautionary statements:
P261: Avoid breathing mist.
P272: Contaminated work clothing should not be allowed out of the workplace.
P280: Wear protective gloves.
Response:
IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: get medical attention. Wash contaminated clothing before reuse.
- Classification according to Directive 67/548/EEC: The product is classified as a skin sensitizer according to Directive 1999/45/EC and its amendments.
- Hazard Symbol / R-Phrase / S-Phrase: R43: May cause sensitization by skin contact.
- Other hazards: none



3. Information on Ingredients:

Description: Proclin 300

Contains	CAS No.	EC-No.	Index-No.	Content
Modified Alkyl Carboxylate	-	-	-	<0.01%
Mixture of 5-Chloro-2-Methyl-4-Isothiazolin-3-One (26172-55-4) and -Methyl-4-Isothiazolin-3-One (2682-20-4)	55965-84-9	-	613-167-00-5	<0.01%
Modified Glycol	-	-	-	≤1.6%

4. First Aid Measures:

- IF IN EYES: Rinse thoroughly with water for at least 15 minutes and immediately consult a physician.
- IF ON SKIN (or hair): Immediately take off contaminated clothing or shoes. Wash with plenty of soap and water. Consult a physician.
- IF INHALED: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
- IF SWALLOWED: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Immediately consult a physician.



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5. Fire Fighting Measures:

- **Suitable extinguishing agents:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- **Special precautions for fire-fighters:** Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental Release Measures:

- **Person-related safety precautions:** Use appropriate personal protective equipment to prevent contamination of skin, eyes and personal clothing. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
- **Measures for environmental protection:** Keep away from drains.
- **Measures for containment and cleaning:** Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. Handling and Storage:

- **Precautions for safe handling:** Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use normal measures for preventive fire protection.
- **Conditions for safe storage:** Store in a cool, dry place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. Exposure Controls and Personal Protection:

- **Control parameters:** Contains no substances with occupational exposure limit values.
- **Individual protection measures:** Wash hands thoroughly after handling chemical products and before eating, smoking or using the toilet. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.

Eye/face protection: Wear approved safety goggles.

Skin/hand protection: Handle with protective gloves, plastic or rubber. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body protection: Wear suitable protective clothing as protection against splashing or contamination.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved.

Respiratory protection: In case of inadequate ventilation, use a suitable respirator. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. Physical and Chemical Properties:

- | | |
|---|--|
| ▪ Appearance: Clear Liquid | Upper/lower flammability or explosive limits: Not available |
| ▪ Odor: Not available | Vapor density : Not available |
| ▪ Odor threshold: Not available | Vapor pressure: Not available |
| ▪ pH: Not available | Relative density: 1.03 g/cm ³ |
| ▪ Melting point/freezing point: -40° C | Solubility in/Miscibility with Water: Soluble |
| ▪ Boiling point/Boiling range: 189° C | Partition coefficient: octanol/water: Not available |
| ▪ Flash point: 118° C – closed cup | Auto igniting: Not available |
| ▪ Evaporation rate: Not available | Decomposition temperature: Not available |
| ▪ Flammability (solid, gas): Not available | Viscosity: Not available |

10. Stability and Reactivity:

- **Chemical Stability:** Stable under recommended storage conditions.
- **Conditions to avoid:** Strong oxidizing agents, reducing agents, Amines, Mercaptans
- **Hazardous decomposition products:** Hazardous decomposition products formed under fire conditions – Carbon oxides, nitrogen oxides (NOx), Sulphur oxides, Hydrogen chloride gas.



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11. Toxicological Information:

- **Acute toxicity:** LD50 Oral – rat – 862 mg/kg
LD50 Dermal – rabbit- 2800 mg/kg
- **Skin corrosion/irritation:** Can cause severe burns. Skin – rabbit – Corrosive
- **Serious eye damage/irritation:** Rabbit – Corrosive to eyes
- **Respiratory or skin sensitization:** May cause allergic skin reaction.
- **Germ cell mutagenicity:** No data available
- **Carcinogenicity:** No data available
- **Reproductive toxicity:** No data available
- **Specific target organ toxicity (STOT) -single exposure:** No data available
- **Specific target organ toxicity (STOT) -repeated exposure:** No data available
- **Aspiration hazard:** Can cause severe burns.
- **Information on likely routes of exposure:** Routes of entry anticipated; oral, dermal, inhalation.
- **Symptoms related to the physical, chemical and toxicological characteristics:**
 - Inhalation:** Harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
 - Ingestion:** Harmful if swallowed. Causes burns.
 - Skin contact:** Harmful if absorbed through skin. Causes burns.
 - Eye contact:** Causes eye burns.
- **Delayed and immediate effects and also chronic effects from short and long term exposure:**
 - Short term exposure: Potential immediate effects:** Not available. **Potential delayed effects:** Not available.
 - Long term exposure: Potential immediate effects:** Not available. **Potential delayed effects:** Allergic contact dermatitis.
- **Effects of chronic exposure:** Proclin 300 at levels greater than or equal to 0.1% is not identified as probable, possible or a confirmed human carcinogen by IARC.
- **Numerical measures of toxicity:** Not available
- **Other Information:** NA

12. Ecological Information:

- **Ecotoxicity:** No data available
- **Biodegradability:** No data available.
- **Bioaccumulative potential:** No data available.
- **Mobility in soil:** No data available.
- **Other adverse effects:** Toxic to aquatic organisms.

13. Disposal Considerations:

- **Disposal methods:** Dispose of waste in accordance to applicable national, regional, or local regulations.
- **Contaminated packaging:** Dispose in the same manner as unused product.
- **Special precautions:** Dispose of small amounts of spilled material as described in section 6. Large spills must be dealt with separately by qualified disposal personnel. Avoid dispersal of spilled material to soil, waterways, drains and sewers.

14. Transport Information:

- **UN Number:** None
 - **DOT regulations:** · **Hazard class:** None
 - **Land transport ADR/RID (cross-border):** Not regulated.
 - **Maritime transport IMDG:** Not regulated.
 - **Marine pollutant:** No
 - **Air transport ICAO-TI and IATA-DGR:** Not regulated.
- Transport/Additional information:** Not dangerous according to the above specifications.



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15. Regulations:

- **EU Regulation (EC) No. 1907/2006 (REACH) Annex XIV:**
List of substances subject to authorization **Substances of very high concern:** None of the components are listed.
Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles: Not applicable.
- **Hazard Symbol / R-Phrase / S-Phrase:** R43 May cause sensitization by skin contact.

16. Other Information:

- **Notice to reader:** To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

2. Hazard Identification:

- **Classification: Regulation (EC) No. 1272/2008 [CLP/GHS]:**
Stop Solution contains Hydrochloric Acid (less than 5%) – not a hazardous substance at this concentration.
- **Pictogram:** none
- **Signal Word:** none
- **Hazard statements:** none
- **Precautionary statements:** none
Response: not needed
- **Classification according to Directive 67/548/EEC:** Not a hazardous substance
- **Hazard Symbol / R-Phrase / S-Phrase:** C-Corrosive, Xi-Irritant / R34-Causes burns, R36-Irritating to eyes, R37-Irritating to respiratory system, R38-Irritating to skin.
- **Other hazards:** none

3. Information on Ingredients:

Description: Hydrochloric Acid, Formula: HCl.

Contains	CAS No.	EC-No.	Index-No.	Content
Water	7732-18-5	231-791-2	NA	>95%
Hydrochloric Acid	7647-01-0	231-595-7	017-002-01-X	<5%

4. First Aid Measures:

- **IF IN EYES:** Rinse thoroughly with water for at least 15 minutes and immediately consult a physician.
- **IF ON SKIN (or hair):** Immediately take off contaminated clothing or shoes. Wash with plenty of soap and water. Consult a physician.
- **IF INHALED:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
- **IF SWALLOWED:** Never give anything by mouth to an unconscious person. Rinse mouth with water. Immediately consult a physician.
- **Potential acute / delayed health effects:**
 - **Eye contact:** Causes serious eye irritation
 - **Skin contact:** Causes skin irritation
 - **Inhalation:** Inhalation of vapors can cause coughing, choking, inflammation of the nose, throat, and upper respiratory tract and in severe cases, pulmonary edema, circulatory failure, and death. / Long term exposure to vapors may cause erosion of teeth. Long term exposures seldom occur due to the corrosive properties of this acid.
 - **Ingestion:** Harmful if swallowed. Irritating to mouth, throat and stomach
- **Notes to physician:** Consult a physician. Show this safety data sheet to the doctor in attendance.



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5. Fire Fighting Measures:

- **Suitable extinguishing agents:** Use water spray or extinguishing measure that are appropriate to local circumstances and the surrounding environment.
- **Hazards from the substance or mixture:** Hydrogen chloride gas.
- **Special precautions for fire-fighters:** Self contained breathing apparatus and full protective clothing must be worn in case of fire.
- **Other information:** This product does not burn.

6. Accidental Release Measures:

- **Person-related safety precautions:** Use appropriate personal protective equipment to prevent contamination of skin, eyes and personal clothing. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.
- **Measures for environmental protection:** Keep away from drains.
- **Measures for containment and cleaning:** Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. Handling and Storage:

- **Precautions for safe handling:** Avoid inhalation of vapour or mist. Avoid contact with eyes and skin.
- **Conditions for safe storage:** Store in a cool, dry place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Do not store in metal containers.

8. Exposure Controls and Personal Protection:

- **Control parameters:**
 - OSHA PEL / NIOSH REL / ACGIH TLV: 5 ppm (7 mg/m³ as a ceiling limit)
 - EU Commission Directive 2000/39/EC: 8 hours – 5 ppm (8 mg/m³) / Short term 10 ppm (15 mg/m³)
- **Appropriate engineering controls:** Use with adequate ventilation including local extraction. Ensure that eyewash stations and safety showers are close to the workstation location.
- **Individual protection measures:** Wash hands thoroughly after handling chemical products and before eating, smoking or using the toilet. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.
 - Eye/face protection:** Wear approved safety goggles.
 - Skin/hand protection:** Handle with protective gloves, plastic or rubber. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
 - Body protection:** Wear suitable protective clothing as protection against splashing or contamination.
 - Other skin protection:** Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved.
 - Respiratory protection:** In case of inadequate ventilation, use a suitable respirator. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. Physical and Chemical Properties:

- | | |
|---|--|
| ▪ Appearance: Colorless liquid | Upper/lower flammability or explosive |
| limits: Not available | |
| ▪ Odor: Pungent | Vapor density : Not available |
| ▪ Odor threshold: Not available | Vapor pressure: Not available |
| ▪ pH: ~1 - 2 | Relative density: Not available |
| ▪ Melting point/freezing point: Not available. | Solubility in/Miscibility with Water: Soluble |
| ▪ Boiling point/Boiling range: Not available | Partition coefficient: octanol/water: Not available |
| ▪ Flash point: Not available | Auto igniting: Not available |
| ▪ Evaporation rate: Not available | Decomposition temperature: Not available |
| ▪ Flammability (solid, gas): Not available | Viscosity: Not available |



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10. Stability and Reactivity:

- **Reactivity:** No data available
- **Chemical Stability:** Stable under recommended storage conditions.
- **Possibility of hazardous reactions:** Under normal conditions of storage and use, hazardous reactions will not occur.
- **Conditions to avoid:** Hydroxides, amines, alkalis and metals.
- **Incompatible materials:** Hydroxides, amines, alkalis or metals such as copper, brass, zinc, potassium and sodium should be avoided.
- **Hazardous decomposition products:** Products formed under fire conditions: toxic gasses and vapors such as chlorine.

11. Toxicological Information:

- **Acute toxicity:** Irritating and corrosive to eyes, skin, and mucous membranes. Can cause severe burns upon contact while the vapors or mist are corrosive and can cause severe irritation or damage to the nose, throat and lungs. Ingestion of this product causes severe burns to the mouth, esophagus, and stomach, with consequent pain, nausea and vomiting.
- **Skin corrosion/irritation:** Can cause burns of the skin and mucous membranes.
- **Serious eye damage/irritation:** Can cause burns, reduced vision or blindness.
- **Respiratory or skin sensitization:** No data available
- **Germ cell mutagenicity:** No data available
- **Carcinogenicity:** IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Hydrochloric acid)
- **Reproductive toxicity:** No data available
- **Specific target organ toxicity (STOT) -single exposure:** 3
- **Specific target organ toxicity (STOT) -repeated exposure:** No data available
- **Aspiration hazard:** Can cause severe burns. Causes respiratory tract irritation.
- **Information on likely routes of exposure:** Routes of entry anticipated; oral, dermal, inhalation.
- **Symptoms related to the physical, chemical and toxicological characteristics:**
 - Inhalation:** May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
 - Ingestion:** May be harmful if swallowed. Causes burns.
 - Skin contact:** May be harmful if absorbed through skin. Causes burns.
 - Eye contact:** Causes eye burns.
- **Delayed and immediate effects and also chronic effects from short and long term exposure:**
 - Short term exposure: Potential immediate effects:** Exposure to vapor or aerosol produces inflammation and may cause ulceration of the nose, throat, and larynx; laryngeal spasm or. Eye and skin burns occur at high concentrations. Burns of the skin and mucous membranes result from contact with the solution.
 - Potential delayed effects:** Burns may progress to ulcerations and to keloid and retractile scarring. Pulmonary edema may occur on rare occasions.
 - Long term (chronic) exposure: Potential immediate effects:** Chronic exposure by skin contact with aqueous solutions may result in dermatitis and photosensitization. Dental discoloration and erosion. **Potential delayed effects:** Not available.
- **Numerical measures of toxicity:** Not available
- **Other Information:** NA

12. Ecological Information:

- **Ecotoxicity:** High concentrations may be toxic to aquatic life.
- **Biodegradability:** When released into the soil, this material is not expected to degrade without pretreatment and may leach into groundwater.
- **Bioaccumulative potential:** No data available.
 - **Mobility in soil:** Liquid may leach into groundwater.
 - **Other adverse effects:** No data available.



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13. Disposal Considerations:

- **Disposal methods:** Dispose of waste in accordance to applicable national, regional, or local regulations. This material should be handled as hazardous waste by a licensed disposal company.
- **Contaminated packaging:** Dispose in the same manner as unused product.
- **Special precautions:** Dispose of small amounts of spilled material as described in section 6. Large spills must be dealt with separately by qualified disposal personnel. Avoid dispersal of spilt material to soil, waterways, drains and sewers.

14. Transport Information:

- **ADR/RID ADN/ADNR IMDG IATA/DOT** – Not regulated.
- **UN Number:** None
- **DOT regulations:** · **Hazard class:** None
- **Land transport ADR/RID (cross-border):** Not regulated.
- **Maritime transport IMDG:** Not regulated.
- **Marine pollutant:** No
- **Air transport ICAO-TI and IATA-DGR:** Not regulated.
- **Transport/Additional information:** Not dangerous according to the above specifications.

15. Regulations:

- **EU Regulation (EC) No. 1907/2006 (REACH) Annex XIV:**
List of substances subject to authorization Substances of very high concern: None of the components are listed.
Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles: Not applicable.
- **US. Toxic Substances Control Act:** On TSCA Inventory
SARA 313 Components: Hydrochloric Acid (acid aerosols listed)
SARA 311/312 Hazards: Acute Health Hazard
CERCLA Reportable Quantity: 5,000 lbs
California Prop. 65: Not listed.

16. Other Information:

- **Hazard Symbol:** C-Corrosive, Xi-Irritant
- **R-Phrase:** R34-Causes burns, R36-Irritating to eyes, R37-Irritating to respiratory system, R38-Irritating to skin.
- **S-Phrase:** S26, In case of contact with eyes, rinse immediately with plenty of water and see medical advice.
- **STOT SE 3**
- **Notice to reader:** To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

2. Hazard Identification:

- **Classification: Regulation (EC) No. 1272/2008 [CLP/GHS]**
Color Reagent B: contains Tetramethylbenzidine in a Proprietary Buffer
Irritant, Dermal – Category 2
Reproductive Toxicity – Category 1B
Acute Toxicity, Dermal – Category 4
Acute Toxicity, Inhalation – Category 4
Eye Irritation – Category 2A
All other components are non-hazardous.
- **Signal Word:** WARNING; DANGER





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- **Hazard statements:** H315 Causes skin irritation. H319 Causes serious eye irritation. H312 Harmful in contact with skin. H332 Harmful if inhaled. H335 May cause respiratory irritation. H360 May damage the unborn child.
- **Precautionary statements:** P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P261 Avoid breathing fumes. P264 Wash hands thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P271 Use only in a well-ventilated area. P280 Wear protective gloves and protective clothing. P281 Use of personal protective equipment is required.
IF SWALLOWED: Call a poison control center or doctor if you feel unwell.
IF ON SKIN: Wash with plenty of soap and water. Call a poison control center. Wash contaminated clothing before reuse.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison control center or doctor/physician if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF EXPOSED OR CONCERNED: Get medical advice/attention.
- **Potential Health Effects:**
Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.
Skin: May be harmful if absorbed through skin. Causes skin irritation.
Eyes: Causes eye irritation.
Ingestion: May be harmful if swallowed.
- **Classification according to Directive 67/548/EEC:** May cause harm to the unborn child. Harmful by inhalation, and in contact with skin. Irritating to eyes.
- **Hazard Symbol:**
T: Toxic
Repr.Cat.2: Reproductive toxins
Xi: Irritant
- **R-Phrase:** R61 May cause harm to unborn child, R20/21 Harmful by inhalation and in contact with skin, R36/37/38 Irritating to eyes, respiratory system and skin.
- **S-Phrase:** S26 in case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36/37 Wear suitable protective clothing and gloves. S45 In case of accident or if you feel unwell, seek medical advice immediately. S53 Avoid exposure – obtain special instructions before use.
- **Other hazards:** Rapidly absorbed through skin.

3. Information on Ingredients:

Description: Tetramethylbenzidine in a Proprietary Buffer

Contains	CAS No.	EC-No.	Index-No.	Content
Proprietary Buffer	NA	NA	NA	>99%
Tetramethylbenzidine	54827-17-7	259-364-6	NA	<0.05%

4. First Aid Measures:

- **Consult a physician** – Show this MSDS to the doctor in attendance.
- **If Inhaled:** Move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
- **In case of skin contact:** Wash off with soap and plenty of water. Consult a physician.
- **In case of eye contact:** Rinse thoroughly with plenty of water for 15 minutes. Consult a physician.
- **If swallowed:** DO NOT INDUCE VOMITING. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
- **Most important symptoms and effects, both acute and delayed:** To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

5. Fire Fighting Measures:

- **Suitable extinguishing agents:** For small fires, use media such as “alcohol” foam, dry chemical or carbon dioxide. For large fires, apply water from as far as possible. Use large quantities of water applied as a mist or spray. Solid streams of water may be ineffective. Cool affected containers with flooding quantities of water.
- **Hazards from the substance or mixture:** Carbon oxides, Nitrogen oxides(NOx)
- **Special precautions for fire-fighters:** Self contained breathing apparatus and full protective clothing must be worn in case of fire. Use water spray to cool unopened containers.



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6. Accidental Release Measures:

- **Person-related safety precautions:** Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
- **Measures for environmental protection:** Prevent further leakage or spillage if safe to do so. Do not let enter drains.
- **Measures for containment and cleaning:** Contain spillage, and then collect with non-combustible absorbent material (eg. sand, diatomaceous earth, vermiculite). Place in a container for disposal according to local regulations.

7. Handling and Storage:

- **Precautions for safe handling:** Avoid exposure, obtain special instructions before use. Avoid contact with skin and eyes. Avoid inhalation of vapor and mist. Keep away from origins of ignition. No smoking. Take measures to prevent the build up of electrostatic charge.
- **Conditions for safe storage:** Store in a cool place. Keep container tightly closed in a dry, well ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. Exposure Controls and Personal Protection:

- **Component:** Tetramethylbenzidine – Not an occupational hazard at these levels.
- **Component:** Proprietary buffer
UK EH40 WEL – Workplace Exposure Limits: Value: STEL, 20 ppm, 61 mg/m³. **Value:** TWA, 10 ppm, 30 mg/m³. Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.
- **Appropriate engineering controls:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.
- **Individual protection measures:** Wash hands thoroughly after handling chemical products and before eating, smoking or using the toilet. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.
 - **Eye/face protection:** Wear approved safety goggles.
 - **Skin/hand protection:** Handle with protective gloves, plastic or rubber. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
 - **Body protection:** Wear suitable protective clothing according to the concentration and amount of the substance at the workplace.
 - **Respiratory protection:** In case of inadequate ventilation, use a suitable respirator. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. Physical and Chemical Properties:

- | | |
|---|--|
| ▪ Appearance: Liquid | Upper/lower flammability or explosive limits: Not available |
| ▪ Odor: Not available | Vapor density : Not available |
| ▪ Odor threshold: Not available | Vapor pressure: Not available |
| ▪ pH: Not available | Relative density: Not available |
| ▪ Melting point/freezing point: Not available. | Boiling point/Boiling range: Not available |
| ▪ Partition coefficient: noctanol/water: Not available | Auto igniting: Not available |
| ▪ Flash point: Not available | Decomposition temperature: Not available |
| ▪ Water solubility: Not available | Viscosity: Not available |
| ▪ Evaporation rate: Not available | |
| ▪ Flammability (solid, gas): Not available | |

10. Stability and Reactivity:

- **Reactivity:** No data available
- **Chemical Stability:** No data available
- **Possibility of hazardous reactions:** No data available
- **Conditions to avoid:** Heat, flames, sparks
- **Incompatible materials:** Strong oxidizing agents.



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- **Hazardous decomposition products:** No data available

11. Toxicological Information:

- **Acute toxicity:** no data available
- **Skin corrosion/irritation:** no data available
- **Serious eye damage/irritation:** no data available
- **Respiratory or skin sensitization:** no data available
- **Germ cell mutagenicity:** Genotoxicity in vitro – mouse – lymphocyte, Mutation in mammalian somatic cells.
- **Carcinogenicity:** Not classified to its carcinogenicity based on its IARC, ACGIH, NTP or EPA classification at levels less than 0.1%.
- **Reproductive toxicity:** May cause congenital malformation in the fetus. Presumed human reproductive toxicant.
- **Specific target organ toxicity (STOT) -single exposure:** No data available
- **Specific target organ toxicity (STOT) -repeated exposure:** No data available
- **Aspiration hazard:** No data available
- **Information on likely routes of exposure:** Routes of entry anticipated; oral, dermal, inhalation.
- **Symptoms related to the physical, chemical and toxicological characteristics:**
 - Inhalation:** Toxic if inhaled. May cause respiratory tract irritation.
 - Ingestion:** May be harmful if swallowed.
 - Skin contact:** May be harmful if absorbed through skin. May cause skin irritation.
 - Eye contact:** Causes serious eye irritation.
- **Delayed and immediate effects and also chronic effects from short and long term exposure:** No data available.

12. Ecological Information:

- **Ecotoxicity:** No data available.
- **Biodegradability:** No data available.
- **Bioaccumulative potential:** No data available.
- **Mobility in soil:** No data available.
- **Other adverse effects:** No data available.

13. Disposal Considerations:

- **Disposal methods:** Dispose of waste in accordance to applicable national, regional, or local regulations. Contact a licensed professional waste disposal service to dispose of this material.
- **Contaminated packaging:** Dispose in the same manner as unused product.

14. Transport Information:

ADR/RID ADN/ADNR IMDG IATA/DOT

ADR/DOT/:	UN Number:	UN1993
RID	Proper Shipping Name:	Flammable liquid, n.o.s. (Proprietary Buffer Mixture)
	Hazard class:	3
	Packing group:	III
IATA:	UN Number:	UN1993
	Proper Shipping Name:	Flammable liquid, n.o.s. (Proprietary Buffer Mixture)
	Hazard class:	3
	Packing group:	III
IMDG:	UN Number:	UN1993
	Proper Shipping Name:	Flammable liquid, n.o.s. (Proprietary Buffer Mixture)
	Hazard class:	3
	Packing group:	III
	Marine Pollutant:	No



Material Safety Data Sheet

Product Name: Human TGF-beta 1 Quantikine ELISA Kit

Reviewed on: 09 Sept 2011

15. Regulations:

▪ US Federal and State Regulations

CERCLA/SARA 302: None of the components are listed.

CERCLA/SARA 304: None of the components are listed.

SARA 313: Proprietary Buffer is listed.

TSCA (Toxic Substances Control Act): Proprietary Buffer and Tetramethylbenzidine are listed.

California Proposition 65: None of the components are listed on California's listing of known or potential carcinogens.

▪ EU Labeling Classification

Labeling conforms with EU regulations.

16. Other Information:

- **Notice to reader:** To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.