Material Safety Data Sheet

Implementing Directives 1999/45/CE, 2001/58/CE, 2001/59/CE

1. Identification of the preparation and of the supplying company:

Product Code:	3KG025
Identification of the Preparation:	Rat Whole PTH ELISA Kit (Cat #3KG025)
Product/Trade Name (as Labeled on box):	Rat Whole PTH ELISA Kit (Cat #3KG025)
Kit Contents:	1) Rat PTH Antibody with Enzyme Label 2) Rat PTH Calibrators and Controls 3) Rat PTH Antibody Coated 96 Well Microplate 4) ELISA Stop Solution 5) Wash Concentrate 6) TMB Substrate
Manufacturer:	Scantibodies Laboratory, Inc.
Manufacturer's Address:	9336 Abraham Way, Santee, CA 92071, USA
Manufacturer's Phone Number:	(619) 258-9300
Date MSDS Prepared:	10 October 2006

2. Composition/Information on Ingredients:

Chemical Characterization:

1) Anti-Rat PTH antibodies labeled with horseradish peroxidase and dissolved in phosphate buffered saline and protein stabilizers with a non-azide, non-mercury preservative.
2) Rat PTH Calibrators & Controls – Lyophilized Human Serum dissolved in phosphate buffered saline and protein stabilizers with a non-azide, non-mercury preservative.
3) Rat PTH Antibodies coated on to a 96 well microplate.
4) TMB (Tetramethylbenzidine) @ 0.5 %
5) Phosphate Buffered Saline with preservative
6) Sulfuric Acid @ 0.5 %

Hazardous Ingredients:

1) Horseradish Peroxidase @ < 0.1%
   CAS Number: N/A
   Symbol: N/A
   R-phrases: N/A
   S-phrases: N/A
2) TMB @ 0.5%
   CAS Number: 7722-84-1
   Symbols: Toxic T
   R-phrases: R23/24/25, R36/37/38, R39/23/24/25
   S-phrases: S7, S16, S24, S33, S36/37/39, S45, S62
3) Sulfuric Acid @ 0.5%
   CAS Number: 7664-93-9
   Symbols: Very Toxic T+; N, Corrosive
   R-phrases: R35, R36/37/38, R49
   S-phrases: S23, S30, S36/37/39, S45, S62

3. Hazards and Potential Health Effects:

Horseradish Peroxidase:

Irritation to eyes and skin on contact. Inhalation may cause irritation of the lungs and respiratory system. Irritation of the eyes is characterized by redness, watering, and itching. Skin irritation is characterized by itching, swelling, reddening, or blistering.

Tetramethylbenzidine:

Clear, colorless, odorless liquid. Corrosive to eyes, nose, throat, lungs, and gastrointestinal tract. May cause irreversible damage to the eyes including blindness.

Sulfuric Acid:

Ingestion:	Corrosive! Swallowing may cause severe burns of the mouth, throat, and stomach. Severe scarring of tissues and death may result. Symptoms may include bleeding, vomiting, diarrhea, fall in blood pressure. Damage may appear days after exposure.
Skin:	Corrosive! Contact with skin can cause irritation or severe burns and scarring with greater exposure.
Eyes:	Corrosive! Causes irritation of eyes, and with greater exposures it can cause burns that may result in permanent impairment of vision, even blindness.
Inhalation:	Severe irritant. Effects from inhalation of dust or mist vary from mild irritation to serious damage of the upper respiratory tract, depending on severity of exposure. Symptoms may include sneezing, sore throat or runny nose. Severe pnuemonitis may occur.
Chronic Exposure:	Chronic exposure or prolonged contact with dilute solutions or dust has a destructive effect upon tissue and may result in lung damage or possibly cancer.
Pre-existing Conditions:	Persons with pre-existing skin disorders, eye problems, or impaired respiratory function may be more susceptible to the effects of the substance.

4. First Aid Procedures:

Horseradish Peroxidase:

Ingestion:	For small amounts, rinse mouth with water provided person is conscious. Consult with a physician.
Skin:	Wash affected area with anti-microbial soap and water, rinse with water. Remove and wash contaminated clothing.
Eyes:	Flush with copious amounts of water or eyewash saline for at least 15 minutes. Consult with a physician if irritation occurs.
Inhalation:	Remove to fresh air; if not breathing, give artificial respiration.

Tetramethylbenzidine, Sulfuric Acid:

Ingestion:	DO NOT INDUCE VOMITING! Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Skin:	Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eyes:	Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.
Inhalation:	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention.

Note to Physician:	Perform endoscopy in all cases of suspected ingestion. In cases of severe esophageal corrosion, the use of therapeutic doses of steroids should be considered. General supportive measures with continual monitoring of gas exchange, acid-balance, electrolytes, and fluid intake are also required.

5. Fire Fighting Measures:

Horseradish Peroxidase:

No special procedures/media are required.

Tetramethylbenzidine, Sulfuric Acid:

Fire:	Not considered to be a fire hazard. Hot or molten material can react violently with water. Can react with certain metals, such as aluminum, to generate flammable hydrogen gas.
Explosion:	Not considered to be an explosion hazard.
Extinguishing Media:	Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool. Adding water to caustic solution generates large amounts of heat.
Special Information:	In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face-piece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures:

Horseradish Peroxidase:

Wear appropriate protective clothing. Cover with absorbent; wash area thoroughly.

Tetramethylbenzidine, Sulfuric Acid:

Notify safety personnel of spill or leaks. Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust. DO not flush caustic residues to the sewer. Residues from spills can be diluted with water, neutralized with dilute acid such as acetic, hydrochloric, or sulfuric. Absorb neutralized caustic residue on clay, vermiculite, or other inert substance and package into a suitable container for disposal. US Regulations (CERCLA) require reporting spills and releases to soil, water, and air in excess of reportable quantities.

7. Handling and Storage:

Horseradish Peroxidase:

Handling:	Wash hands after working with substance. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Use proper personal protective equipment as indicated in section 8.
Storage:	Keep in a tightly closed container. Keep container closed when not in use. Store at 2-8 °C. Keep away from sources of heat and ignition. Avoid excessive heat and light.

Tetramethylbenzidine, Sulfuric Acid:

Handling:	Wash hands after working with substance. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Use proper personal protective equipment as indicated in section 8. Always add the caustic to water while stirring; never the reverse. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

Storage: Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture, and incompatibilities.

8. Exposure Controls/Personal Protection:

Horseradish Peroxidase:

Wear latex or vinyl gloves, a laboratory coat, and safety glasses during use.

Tetramethylbenzidine, Sulfuric Acid:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. If the exposure limit is exceeded and engineering controls are not feasible, a half face-piece particulate respirator (NIOSH type N95 or better filters) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier whichever is lowest. A full face-piece particulate respirator may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full face-piece positive-pressure, air-supplied respirator. Impervious protective clothing, including boots, gloves, lab coat, apron or coveralls as appropriate, to prevent skin contact. Use chemical safety goggles and/or full face shield where splashing is possible. Maintain eye wash fountain and quick drench facilities in work area.

Warning: Air-purifying respirators do not protect workers in oxygen deficient atmospheres.

9. Physical and Chemical Properties:

Coated Micro-plates: Polystyrene micro-plates with no odor.

Buffered Salt Solution: Clear colorless liquid with no detectable odor.

TMB Substrate: Clear to slightly yellow transparent liquid with no detectable odor.

Rat PTH Enzyme Antibody: Clear colorless liquid with no detectable odor.

Rat PTH Calibrators & Controls: Yellow to brown colored liquid in lyophilized form.

Stop Solution: Clear colorless liquid with no detectable odor.

Wash Concentrate: Clear colorless liquid with no detectable odor.

10. Stability and Reactivity:

Horseradish Peroxidase:

Stable at 2-8 °C until expiry date if unopened; once opened stable for 8 weeks if stored at 2-8 °C.

No reactivity data available.

Tetramethylbenzidine, Sulfuric Acid:

Stable under ordinary conditions of use and storage. Hazardous polymerization will not occur. Excessive heat and contamination could cause decomposition.

11. Toxological Information:

Horseradish Peroxidase:

Short-term effects:	In pure form, these components are harmful and may be toxic if inhaled, swallowed, or absorbed through the skin. May cause eye and skin irritation. At product concentrations, Horseradish Peroxidase is not believed to cause hazardous short-term effects.
Long-term effects:	In pure form, these components are classified as questionable carcinogens with experimental tumourigenic data. At product concentrations, there are no hazardous long-term effects documented.
Precautionary note:	To the best of our knowledge, the chemical, physical, and toxicological properties of this product have not been thoroughly investigated at product concentrations.

Sulfuric Acid or Tetramethylbenzidine:

Short-term effects:	In pure form, Sulfuric Acid and Tetramethylbenzidine are toxic and corrosive and may be fatal if inhaled, swallowed, or absorbed through the skin. May cause eye and skin irritation. At product concentrations, Sulfuric Acid and Tetramethylbenzidine are not believed to cause hazardous short-term effects.
Long-term effects:	In pure form, Sulfuric Acid and Tetramethylbenzidine are classified as carcinogens with experimental tumourigenic data. Sulfuric Acid and Tetramethylbenzidine are investigated as mutagens. At product concentrations, there are no hazardous long-term effects documented.
Precautionary note:	To the best of our knowledge, the chemical, physical, and toxicological properties of these products have not been thoroughly investigated at product concentrations.

12. Ecological Information:

Horseradish Peroxidase:

No harmful effects at product concentration.

Tetramethylbenzidine, Sulfuric Acid:

No information found.

13. Disposal:

Horseradish Peroxidase:

Observe all federal, state, and local environmental regulations.

Tetramethylbenzidine, Sulfuric Acid:

The appropriate regulatory agencies should be contacted prior to disposal. State and local disposal requirements may differ from federal disposal regulations. Dispose of containers and unused contents in accordance with federal, state, and local requirements.

14. Transport Information:

CDG UK: Non-hazardous for road freight

IMDG: Non-hazardous for sea freight

IATA: Non-hazardous for air freight

15. Regulatory Information:

Tetramethylbenzidine (≤1%):

Labeling according to EC directives:	Contains 0.5% Tetramethylbenzidine
	Symbol: Toxic T
	R-phrases: R23/24/25, R36/37/38, R39/23/24/25
	S-phrases: S7, S16, S24, S33, S36/37/39, S45, S62

Sulfuric Acid (≤1%):

Labeling according to EC directives:	Contains 0.5% Sulfuric Acid
	Symbol: Very Toxic T+; Corrosive
	R-phrases: R35, R36/37/38, R49
	S-phrases: S23, S30, S36/37/39, S45, S62

Small pack derogation applies to all other risks and safety phrases.

16. Other Information:

R23/24/25: Toxic by inhalation, in contact with skin and if swallowed.

R35: Causes severe burns.

R36/37/38: Irritating to eyes, respiratory system, and skin.

R39/23/24/25: Toxic: Danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

R49: May cause cancer by inhalation.

S7: Keep container tightly closed.

S16: Keep away from sources of ignition – No smoking.

S23: Do not breathe gas/fumes/vapour/spray.

S24: Avoid contact with skin.

S30: Never add water to this product.

S33: Take precautionary measures against static discharges.

S36/37/39: Wear suitable protective clothing, gloves, and eye/face protection.

S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S62: If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

17. Document Revisions:

Version	Date:	Changes:
01	10 OCT 2006	Initial Release.

18. Document Approval:

Reviewed/Approved By: _____ Date: _____