

SAFETY DATA SHEET

BioOcean® Human Carbonic Anhydrase XII/CA12 ELISA Kit

Section 1. Identification

GHS product identifier Code: BioOcean® Human Carbonic Anhydrase XII/CA12 ELISA Kit, EK1245

Other means of identification: Not available

Trade name: Human Carbonic Anhydrase XII/CA12 ELISA Kit

Supplier/Manufacturer 3550 Lexington Ave, Suite 203, Shoreview, Minnesota 55126

In case of emergency: Bio-Ocean: 1-800-852-7601

Section 2. Hazards identification

OSHA/HCS status:	BioOcean® anti-Human CA12 detect antibody(100X)	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910. 1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
	BioOcean® Human CA12 Standard (lyophilized)	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910. 1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910. 1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
	BioOcean® Substrate Reagent	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910. 1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
	BioOcean® Stop Solution	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910. 1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
Classification of the substance or mixture:	BioOcean® anti-Human CA12 detect antibody(100X)	Not classified.
	BioOcean® Human CA12 Standard (lyophilized)	Not classified.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not classified.
	BioOcean® Substrate Reagent	Not classified.
	BioOcean® Stop Solution	Not classified.
GHS label elements Signal word	BioOcean® anti-Human CA12 detect antibody(100X)	No signal word.
	BioOcean® Human CA12 Standard (lyophilized)	No signal word.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	No signal word.
	BioOcean® Substrate Reagent	No signal word.
	BioOcean® Stop Solution	No signal word.
Hazard statements	BioOcean® anti-Human CA12 detect antibody(100X)	No known significant effects or critical hazards.
	BioOcean® Human CA12 Standard (lyophilized)	No known significant effects or critical hazards.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	No known significant effects or critical hazards.
	BioOcean® Substrate Reagent	No known significant effects or critical hazards.
	BioOcean® Stop Solution	No known significant effects or critical hazards.
Precautionary statements General	BioOcean® anti-Human CA12 detect antibody(100X)	Not applicable.
	BioOcean® Human CA12 Standard (lyophilized)	Not applicable.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not applicable.
	BioOcean® Substrate Reagent	Not applicable.
	BioOcean® Stop Solution	Not applicable.

Prevention	BioOcean® anti-Human CA12 detect antibody(100X)	Not applicable.
	BioOcean® Human CA12 Standard (lyophilized)	Not applicable.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not applicable.
	BioOcean® Substrate Reagent	Not applicable.
	BioOcean® Stop Solution	Not applicable.
Response	BioOcean® anti-Human CA12 detect antibody(100X)	Not applicable.
	BioOcean® Human CA12 Standard (lyophilized)	Not applicable.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not applicable.
	BioOcean® Substrate Reagent	Not applicable.
	BioOcean® Stop Solution	Not applicable.
Storage	BioOcean® anti-Human CA12 detect antibody(100X)	Not applicable.
	BioOcean® Human CA12 Standard (lyophilized)	Not applicable.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not applicable.
	BioOcean® Substrate Reagent	Not applicable.
	BioOcean® Stop Solution	Not applicable.
Disposal	BioOcean® anti-Human CA12 detect antibody(100X)	Not applicable.
	BioOcean® Human CA12 Standard (lyophilized)	Not applicable.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not applicable.
	BioOcean® Substrate Reagent	Not applicable.
	BioOcean® Stop Solution	Not applicable.
Supplemental label elements	BioOcean® anti-Human CA12 detect antibody(100X)	None known.
	BioOcean® Human CA12 Standard (lyophilized)	None known.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	None known.
	BioOcean® Substrate Reagent	None known.
	BioOcean® Stop Solution	None known.
Hazards not otherwise classified	BioOcean® anti-Human CA12 detect antibody(100X)	None known.
	BioOcean® Human CA12 Standard (lyophilized)	None known.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	None known.
	BioOcean® Substrate Reagent	None known.
	BioOcean® Stop Solution	None known.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture

Ingredient name	%	CAS number
BioOcean® Human CA12 Standard	99.9-100	-

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	BioOcean® anti-Human CA12 detect antibody(100X)	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	BioOcean® Human CA12 Standard (lyophilized)	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

	BioOcean® Substrate Reagent	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	BioOcean® Stop Solution	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Inhalation	BioOcean® anti-Human CA12 detect antibody(100X)	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	BioOcean® Human CA12 Standard (lyophilized)	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	BioOcean® Substrate Reagent	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	BioOcean® Stop Solution	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	BioOcean® anti-Human CA12 detect antibody(100X)	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	BioOcean® Human CA12 Standard (lyophilized)	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	BioOcean® Substrate Reagent	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	BioOcean® Stop Solution	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	BioOcean® anti-Human CA12 detect antibody(100X)	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	BioOcean® Human CA12 Standard (lyophilized)	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	BioOcean® Substrate Reagent	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	BioOcean® Stop Solution	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed Potential acute health effects		
Eye contact	BioOcean® anti-Human CA12 detect antibody(100X)	No known significant effects or critical hazards.
	BioOcean® Human CA12 Standard (lyophilized)	No known significant effects or critical hazards.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	No known significant effects or critical hazards.
	BioOcean® Substrate Reagent	No known significant effects or critical hazards.
	BioOcean® Stop Solution	No known significant effects or critical hazards.
Inhalation	BioOcean® anti-Human CA12 detect antibody(100X)	No known significant effects or critical hazards.
	BioOcean® Human CA12 Standard (lyophilized)	No known significant effects or critical hazards.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	No known significant effects or critical hazards.
	BioOcean® Substrate Reagent	No known significant effects or critical hazards.
	BioOcean® Stop Solution	No known significant effects or critical hazards.
Skin contact	BioOcean® anti-Human CA12 detect antibody(100X)	No known significant effects or critical hazards.
	BioOcean® Human CA12 Standard (lyophilized)	No known significant effects or critical hazards.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	No known significant effects or critical hazards.
	BioOcean® Substrate Reagent	No known significant effects or critical hazards.
	BioOcean® Stop Solution	No known significant effects or critical hazards.

Ingestion	BioOcean® anti-Human CA12 detect antibody(100X)	No known significant effects or critical hazards.
	BioOcean® Human CA12 Standard (lyophilized)	No known significant effects or critical hazards.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	No known significant effects or critical hazards.
	BioOcean® Substrate Reagent	No known significant effects or critical hazards.
	BioOcean® Stop Solution	No known significant effects or critical hazards.
Over-exposure signs/symptoms		
Eye contact	BioOcean® anti-Human CA12 detect antibody(100X)	No specific data.
	BioOcean® Human CA12 Standard (lyophilized)	No specific data.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	No specific data.
	BioOcean® Substrate Reagent	No specific data.
	BioOcean® Stop Solution	No specific data.
Inhalation	BioOcean® anti-Human CA12 detect antibody(100X)	No specific data.
	BioOcean® Human CA12 Standard (lyophilized)	No specific data.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	No specific data.
	BioOcean® Substrate Reagent	No specific data.
	BioOcean® Stop Solution	No specific data.
Skin contact	BioOcean® anti-Human CA12 detect antibody(100X)	No specific data.
	BioOcean® Human CA12 Standard (lyophilized)	No specific data.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	No specific data.
	BioOcean® Substrate Reagent	No specific data.
	BioOcean® Stop Solution	No specific data.
Ingestion	BioOcean® anti-Human CA12 detect antibody(100X)	No specific data.
	BioOcean® Human CA12 Standard (lyophilized)	No specific data.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	No specific data.
	BioOcean® Substrate Reagent	No specific data.
	BioOcean® Stop Solution	No specific data.
Indication of immediate medical attention and special treatment needed, if necessary, see toxicological information (Section 11)		
Notes to physician	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.	
Specific treatments	No specific treatment	
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training.	

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	BioOcean® anti-Human CA12 detect antibody(100X)	Use an extinguishing agent suitable for the surrounding fire.
	BioOcean® Human CA12 Standard (lyophilized)	Use an extinguishing agent suitable for the surrounding fire.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Use an extinguishing agent suitable for the surrounding fire.
	BioOcean® Substrate Reagent	Use an extinguishing agent suitable for the surrounding fire.
	BioOcean® Stop Solution	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	BioOcean® anti-Human CA12 detect antibody(100X)	None known.
	BioOcean® Human CA12 Standard (lyophilized)	None known.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	None known.
	BioOcean® Substrate Reagent	None known.
	BioOcean® Stop Solution	None known.
Specific hazards arising from the chemical	BioOcean® anti-Human CA12 detect antibody(100X)	In a fire or if heated, a pressure increase will occur and the container may burst.
	BioOcean® Human CA12 Standard (lyophilized)	In a fire or if heated, a pressure increase will occur and the container may burst.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	In a fire or if heated, a pressure increase will occur and the container may burst.
	BioOcean® Substrate Reagent	In a fire or if heated, a pressure increase will occur and the container may burst.

	BioOcean® Stop Solution	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	BioOcean® anti-Human CA12 detect antibody(100X)	No specific data.
	BioOcean® Human CA12 Standard (lyophilized)	No specific data.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	No specific data.
	BioOcean® Substrate Reagent	No specific data.
	BioOcean® Stop Solution	No specific data.
Special protective actions for fire-fighters	BioOcean® anti-Human CA12 detect antibody(100X)	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	BioOcean® Human CA12 Standard (lyophilized)	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	BioOcean® Substrate Reagent	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	BioOcean® Stop Solution	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	BioOcean® anti-Human CA12 detect antibody(100X)	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	BioOcean® Human CA12 Standard (lyophilized)	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	BioOcean® Substrate Reagent	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	BioOcean® Stop Solution	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill

Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

BioOcean® anti-Human CA12 detect antibody(100X)	Put on appropriate personal protective equipment (see Section 8). Put on appropriate personal protective equipment (see Section 8).
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Advice on general occupational hygiene

BioOcean® Human CA12 Standard (lyophilized)
 BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)
 BioOcean® Substrate Reagent
 BioOcean® Stop Solution

Put on appropriate personal protective equipment (see Section 8).
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BioOcean® anti-Human CA12 detect antibody(100X)

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

BioOcean® Human CA12 Standard (lyophilized)

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

BioOcean® Substrate Reagent

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

BioOcean® Stop Solution

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage including any incompatibilities

BioOcean® anti-Human CA12 detect antibody(100X)

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use.

Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry,

BioOcean® Human CA12 Standard (lyophilized)

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use.

Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry,

BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use.

Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry,

BioOcean® Substrate Reagent

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use.

Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry,

BioOcean® Stop Solution

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry,

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None

Appropriate engineering controls

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side- shields.

Skin protection

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Physical state

BioOcean® anti-Human CA12 detect antibody(100X)	Liquid.
BioOcean® Human CA12 Standard (lyophilized)	Solid
BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Liquid.
BioOcean® Substrate Reagent	Liquid.
BioOcean® Stop Solution	Liquid.

Color

BioOcean® anti-Human CA12 detect antibody(100X)	Not available.
BioOcean® Human CA12 Standard (lyophilized)	Not available.
BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not available.
BioOcean® Substrate Reagent	Not available.
BioOcean® Stop Solution	Not available.

Odor

BioOcean® anti-Human CA12 detect antibody(100X)	Not available.
BioOcean® Human CA12 Standard (lyophilized)	Not available.
BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not available.
BioOcean® Substrate Reagent	Not available.
BioOcean® Stop Solution	Not available.

Flash point

BioOcean® anti-Human CA12 detect antibody(100X)	Not available.
BioOcean® Human CA12 Standard (lyophilized)	Not available.
BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not available.
BioOcean® Substrate Reagent	Not available.
BioOcean® Stop Solution	Not available.

Auto-ignition temperature	BioOcean® anti-Human CA12 detect antibody(100X)	Not available.
	BioOcean® Human CA12 Standard (lyophilized)	Not available.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not available.
	BioOcean® Substrate Reagent	Not available.
	BioOcean® Stop Solution	Not available.
Flammable limits	BioOcean® anti-Human CA12 detect antibody(100X)	Not available.
	BioOcean® Human CA12 Standard (lyophilized)	Not available.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not available.
	BioOcean® Substrate Reagent	Not available.
	BioOcean® Stop Solution	Not available.
Molecular weight	BioOcean® anti-Human CA12 detect antibody(100X)	Not available.
	BioOcean® Human CA12 Standard (lyophilized)	Not available.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not available.
	BioOcean® Substrate Reagent	Not available.
	BioOcean® Stop Solution	Not available.
Molecular formula	BioOcean® anti-Human CA12 detect antibody(100X)	Not available.
	BioOcean® Human CA12 Standard (lyophilized)	Not available.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not available.
	BioOcean® Substrate Reagent	Not available.
	BioOcean® Stop Solution	Not available.
pH	BioOcean® anti-Human CA12 detect antibody(100X)	7.0-7.2
	BioOcean® Human CA12 Standard (lyophilized)	Not available
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	7.0-7.2
	BioOcean® Substrate Reagent	7.0-7.2
	BioOcean® Stop Solution	1.1-1.3
Boiling/condensation point	BioOcean® anti-Human CA12 detect antibody(100X)	Not available.
	BioOcean® Human CA12 Standard (lyophilized)	Not available.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not available.
	BioOcean® Substrate Reagent	Not available.
	BioOcean® Stop Solution	Not available.
Melting/freezing point	BioOcean® anti-Human CA12 detect antibody(100X)	Not available.
	BioOcean® Human CA12 Standard (lyophilized)	Not available.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not available.
	BioOcean® Substrate Reagent	Not available.
	BioOcean® Stop Solution	Not available.
Relative density	BioOcean® anti-Human CA12 detect antibody(100X)	Not available.
	BioOcean® Human CA12 Standard (lyophilized)	Not available.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not available.
	BioOcean® Substrate Reagent	Not available.
	BioOcean® Stop Solution	Not available.
Vapor pressure	BioOcean® anti-Human CA12 detect antibody(100X)	Not available.
	BioOcean® Human CA12 Standard (lyophilized)	Not available.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not available.
	BioOcean® Substrate Reagent	Not available.
	BioOcean® Stop Solution	Not available.

Vapor density	BioOcean® anti-Human CA12 detect antibody(100X)	Not available.
	BioOcean® Human CA12 Standard (lyophilized)	Not available.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not available.
	BioOcean® Substrate Reagent	Not available.
	BioOcean® Stop Solution	Not available.

Volatility	BioOcean® anti-Human CA12 detect antibody(100X)	Not available.
	BioOcean® Human CA12 Standard (lyophilized)	Not available.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not available.
	BioOcean® Substrate Reagent	Not available.
	BioOcean® Stop Solution	Not available.

Evaporation rate	BioOcean® anti-Human CA12 detect antibody(100X)	Not available.
	BioOcean® Human CA12 Standard (lyophilized)	Not available.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not available.
	BioOcean® Substrate Reagent	Not available.
	BioOcean® Stop Solution	Not available.

Viscosity	BioOcean® anti-Human CA12 detect antibody(100X)	Not available.
	BioOcean® Human CA12 Standard (lyophilized)	Not available.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not available.
	BioOcean® Substrate Reagent	Not available.
	BioOcean® Stop Solution	Not available.

Solubility	BioOcean® anti-Human CA12 detect antibody(100X)	Not available.
	BioOcean® Human CA12 Standard (lyophilized)	Not available.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not available.
	BioOcean® Substrate Reagent	Not available.
	BioOcean® Stop Solution	Not available.

Physical/chemical properties comments	BioOcean® anti-Human CA12 detect antibody(100X)	Not available.
	BioOcean® Human CA12 Standard (lyophilized)	Not available.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not available.
	BioOcean® Substrate Reagent	Not available.
	BioOcean® Stop Solution	Not available.

Section 10. Stability and reactivity

Reactivity	BioOcean® anti-Human CA12 detect antibody(100X)	No specific test data related to reactivity available for this product or its ingredients.
	BioOcean® Human CA12 Standard (lyophilized)	No specific test data related to reactivity available for this product or its ingredients.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	No specific test data related to reactivity available for this product or its ingredients.
	BioOcean® Substrate Reagent	No specific test data related to reactivity available for this product or its ingredients.
	BioOcean® Stop Solution	No specific test data related to reactivity available for this product or its ingredients.

Chemical stability	BioOcean® anti-Human CA12 detect antibody(100X)	The product is stable.
	BioOcean® Human CA12 Standard (lyophilized)	The product is stable.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	The product is stable.
	BioOcean® Substrate Reagent	The product is stable.
	BioOcean® Stop Solution	The product is stable.

Possibility of hazardous reactions

BioOcean® anti-Human CA12 detect antibody(100X)
BioOcean® Human CA12 Standard (lyophilized)
BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)
BioOcean® Substrate Reagent
BioOcean® Stop Solution

Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.

Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.

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Conditions to avoid

BioOcean® anti-Human CA12 detect antibody(100X)
BioOcean® Human CA12 Standard (lyophilized)
BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)
BioOcean® Substrate Reagent
BioOcean® Stop Solution

No specific data.

No specific data.

No specific data.

No specific data.

No specific data.

Incompatible materials

BioOcean® anti-Human CA12 detect antibody(100X)
BioOcean® Human CA12 Standard (lyophilized)
BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)
BioOcean® Substrate Reagent
BioOcean® Stop Solution

No specific data.

No specific data.

No specific data.

No specific data.

No specific data.

Hazardous decomposition products

BioOcean® anti-Human CA12 detect antibody(100X)
BioOcean® Human CA12 Standard (lyophilized)
BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)
BioOcean® Substrate Reagent
BioOcean® Stop Solution

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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Section 11. Toxicological information**Information on toxicological effects****Acute toxicity:** Not available.**Irritation/Corrosion:** Not available.**Sensitization:** Not available.**Mutagenicity:** Not available.**Carcinogenicity:** Not available.**Reproductive toxicity:** Not available.**Teratogenicity:** Not available.**Specific target organ toxicity (single exposure):** Not available.**Specific target organ toxicity (repeated exposure):** Not available.**Aspiration hazard:** Not available.**Information on the likely routes of exposure:** Not available.**Potential acute health effects****Eye contact:** Not available.

Inhalation: Not available.
Skin contact: Not available.
Ingestion: Not available.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: Not available.
Inhalation: Not available.
Skin contact: Not available.
Ingestion: Not available.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure: Not available.
Potential immediate effects: Not available.
Potential delayed effects: Not available.
Long term exposure: Not available.
Potential immediate effects: Not available.
Potential delayed effects: Not available.
Potential chronic health effects:
General: Not available.
Carcinogenicity: Not available.
Mutagenicity: Not available.
Teratogenicity: Not available.
Developmental effects: Not available.
Fertility effects: Not available.
Numerical measures of toxicity Acute toxicity estimates: Not available.
Interactive effects: Not available.
Other information: Not available.

Section 12. Ecological information

Toxicity: Not available.
Persistence and degradability: Not available.
Bioaccumulative potential: Not available.
Mobility in soil

Soil/water partition: coefficient (K_{oc})	BioOcean® anti-Human CA12 detect antibody(100X)	Not available.
	BioOcean® Human CA12 Standard (lyophilized)	Not available.
	BioOcean® PBS Buffer with Tween 20 (Assay, Diluent or Washing buffer)	Not available.
	BioOcean® Substrate Reagent	Not available.
	BioOcean® Stop Solution	Not available.

Mobility: Not available.
Other adverse effects: No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	ADR/RID	IMDG	IATA
UN number	Not available.	Not available.	Not available.	Not available.	Not available.	Not available.
UN proper shipping name	Not available.	Not available.	Not available.	Not available.	Not available.	Not available.
Packing group	-	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.	No.
Additional information	-	-	-	-	-	-

Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

Section 15. Regulatory information

U.S. Federal regulations: TSCA 8(a) CDR Exempt/Partial exemption: Not determined

United States inventory (TSCA 8b): Not determined.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs): Not listed

Clean Air Act Section 602 Class I Substances: Not listed

Clean Air Act Section 602 Class II Substances: Not listed

DEA List I Chemicals (Precursor Chemicals): Not listed

DEA List II Chemicals (Essential Chemicals): Not listed

SARA 302/304 Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ (lbs)	(gallons)	SARA 304 RQ (lbs)	(gallons)
BioOcean® Substrate Reagent with hydrogen peroxide	0-1	Yes.	1000	106.1	1000	106.1

SARA 304 RQ: 68292000 lbs / 31004568 kg

SARA 311/312 Classification: Not applicable.

Composition/information on ingredients: No products were found.

State regulations

Massachusetts: None of the components are listed.

New York: None of the components are listed.

New Jersey: None of the components are listed.

Pennsylvania: None of the components are listed.

Section 15. Regulatory information

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Canada

WHMIS (Canada)

BioOcean® anti-Human CA12 detect
antibody(100X)

Not controlled under WHMIS (Canada).

BioOcean® Human CA12 Standard (lyophilized)

Not controlled under WHMIS (Canada).

BioOcean® PBS Buffer with Tween 20 (Assay,
Diluent or Washing buffer)

Not controlled under WHMIS (Canada).

BioOcean® Substrate Reagent

Not controlled under WHMIS (Canada).

BioOcean® Stop Solution

Not controlled under WHMIS (Canada).

Canadian lists Canadian NPRI: None of the components are listed.

CEPA Toxic substances: None of the components are listed

Canada inventory: Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	0
Flammability	0
Physical hazards	0

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



History

Date of issue/Date of revision: 6/11/2016

Date of previous issue: No previous validation.

Version: 1

Section 16. Other information

Key to abbreviations:

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

UN = United Nations

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