



SAFETY DATA SHEET

Berichrom® Antithrombin III (A)

Section 1. Identification

Product identifier : Berichrom® Antithrombin III (A)
Product code : OWWR15, 10873898; OWWR17, 10873899; OWWR195J, 10465718; OWWR215J, 10465719
Product type : Liquid.

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

Not applicable.

Manufactured/supplied : Sysmex Americas
577 Aptakistic RD
Lincolnshire, IL 60069
Company Phone Number: (224) 543-9500

Emergency telephone number ChemTel Inc.
1-800-255-3924 (North America)
1-813-248-0585 (International)

Section 2. Hazards identification

OSHA/HCS status : Berichrom® Antithrombin III (A) Buffer Solution
While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Berichrom® Antithrombin III (A) Substrate Reagent
While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Berichrom® Antithrombin III (A) Thrombin Reagent
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : **Berichrom® Antithrombin III (A) Thrombin Reagent**
RESPIRATORY SENSITIZATION Category 1

Additional information : Not available.

Sodium azide may react with lead or copper plumbing to form highly explosive metal azides.

GHS label elements

Hazard pictograms :



Section 2. Hazards identification

Signal word	: Berichrom® Antithrombin III (A) Buffer Solution	No signal word.
	: Berichrom® Antithrombin III (A) Substrate Reagent	No signal word.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	Danger
Hazard statements	: Berichrom® Antithrombin III (A) Buffer Solution	No known significant effects or critical hazards.
	: Berichrom® Antithrombin III (A) Substrate Reagent	No known significant effects or critical hazards.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
<u>Precautionary statements</u>		
Prevention	: Berichrom® Antithrombin III (A) Buffer Solution	Not applicable.
	: Berichrom® Antithrombin III (A) Substrate Reagent	Not applicable.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	P284 - Wear respiratory protection. P261 - Avoid breathing dust.
Response	: Berichrom® Antithrombin III (A) Buffer Solution	Not applicable.
	: Berichrom® Antithrombin III (A) Substrate Reagent	Not applicable.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor.
Storage	: Berichrom® Antithrombin III (A) Buffer Solution	Not applicable.
	: Berichrom® Antithrombin III (A) Substrate Reagent	Not applicable.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	Not applicable.
Disposal	: Berichrom® Antithrombin III (A) Buffer Solution	Not applicable.
	: Berichrom® Antithrombin III (A) Substrate Reagent	Not applicable.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	: Berichrom® Antithrombin III (A) Buffer Solution	None known.
	: Berichrom® Antithrombin III (A) Substrate Reagent	None known.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	None known.
Hazards not otherwise classified	: Berichrom® Antithrombin III (A) Buffer Solution	None known.
	: Berichrom® Antithrombin III (A) Substrate Reagent	None known.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	None known.

Section 3. Composition/information on ingredients

Substance/mixture	: Berichrom® Antithrombin III (A) Buffer Solution	Mixture
	Berichrom® Antithrombin III (A) Substrate Reagent	Mixture
	Berichrom® Antithrombin III (A) Thrombin Reagent	Mixture

Ingredient name	%	CAS number
Berichrom® Antithrombin III (A) Buffer Solution		
sodium azide	≤0.1	26628-22-8
Berichrom® Antithrombin III (A) Thrombin Reagent		
Thrombin	≤0.3	9002-04-4

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

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

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	: Berichrom® Antithrombin III (A) Buffer 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.
	Berichrom® Antithrombin III (A) 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.
	Berichrom® Antithrombin III (A) Thrombin Reagent	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
Inhalation	: Berichrom® Antithrombin III (A) Buffer Solution	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	Berichrom® Antithrombin III (A) Substrate Reagent	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	Berichrom® Antithrombin III (A) Thrombin Reagent	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or

Section 4. First aid measures

		oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In the event of any complaints or symptoms, avoid further exposure.
Skin contact	: Berichrom® Antithrombin III (A) Buffer Solution	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Berichrom® Antithrombin III (A) Substrate Reagent	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Berichrom® Antithrombin III (A) Thrombin Reagent	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: Berichrom® Antithrombin III (A) Buffer Solution	Wash out mouth with water. 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.
	Berichrom® Antithrombin III (A) Substrate Reagent	Wash out mouth with water. 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.
	Berichrom® Antithrombin III (A) Thrombin Reagent	Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Section 4. First aid measures

Eye contact	: Berichrom® Antithrombin III (A) Buffer Solution	No known significant effects or critical hazards.
	: Berichrom® Antithrombin III (A) Substrate Reagent	No known significant effects or critical hazards.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	No known significant effects or critical hazards.
Inhalation	: Berichrom® Antithrombin III (A) Buffer Solution	No known significant effects or critical hazards.
	: Berichrom® Antithrombin III (A) Substrate Reagent	No known significant effects or critical hazards.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin contact	: Berichrom® Antithrombin III (A) Buffer Solution	No known significant effects or critical hazards.
	: Berichrom® Antithrombin III (A) Substrate Reagent	No known significant effects or critical hazards.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	No known significant effects or critical hazards.
Ingestion	: Berichrom® Antithrombin III (A) Buffer Solution	No known significant effects or critical hazards.
	: Berichrom® Antithrombin III (A) Substrate Reagent	No known significant effects or critical hazards.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: Berichrom® Antithrombin III (A) Buffer Solution	No specific data.
	: Berichrom® Antithrombin III (A) Substrate Reagent	No specific data.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	No specific data.
Inhalation	: Berichrom® Antithrombin III (A) Buffer Solution	No specific data.
	: Berichrom® Antithrombin III (A) Substrate Reagent	No specific data.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	Adverse symptoms may include the following: wheezing and breathing difficulties asthma
Skin contact	: Berichrom® Antithrombin III (A) Buffer Solution	No specific data.
	: Berichrom® Antithrombin III (A) Substrate Reagent	No specific data.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	No specific data.
Ingestion	: Berichrom® Antithrombin III (A) Buffer Solution	No specific data.
	: Berichrom® Antithrombin III (A) Substrate Reagent	No specific data.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	: No specific treatment.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : In case of fire, use water spray (fog), foam or dry chemical.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides
halogenated compounds
metal oxide/oxides

Special protective actions for fire-fighters : 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 : 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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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. Approach release from upwind. 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. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Section 7. Handling and storage

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : 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** : 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. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Berichrom® Antithrombin III (A) Buffer Solution sodium azide	ACGIH TLV (United States, 1/2021). C: 0.29 mg/m ³ , (as Sodium azide) C: 0.11 ppm, (as Hydrazoic acid vapor) OSHA PEL 1989 (United States, 3/1989). Absorbed through skin. CEIL: 0.1 ppm, (as HN ₃) CEIL: 0.3 mg/m ³ , (as NaN ₃) NIOSH REL (United States, 10/2020). Absorbed through skin. CEIL: 0.1 ppm, (as HN ₃) CEIL: 0.3 mg/m ³ , (NaN ₃)

- Appropriate engineering controls** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- 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

Section 8. Exposure controls/personal 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- 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** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

- Physical state** : Berichrom® Antithrombin III (A) Buffer Solution Liquid.
Berichrom® Antithrombin III (A) Substrate Reagent Solid.
Berichrom® Antithrombin III (A) Thrombin Reagent Solid.
- Color** : Berichrom® Antithrombin III (A) Buffer Solution Colorless.
Berichrom® Antithrombin III (A) Substrate Reagent White to yellowish.
Berichrom® Antithrombin III (A) Thrombin Reagent White to yellowish.
- Odor** : Berichrom® Antithrombin III (A) Buffer Solution Odorless.
Berichrom® Antithrombin III (A) Substrate Reagent Odorless.
Berichrom® Antithrombin III (A) Thrombin Reagent Odorless.
- pH** : Berichrom® Antithrombin III (A) Buffer Solution 8.2
Berichrom® Antithrombin III (A) Substrate Reagent Not applicable.
Berichrom® Antithrombin III (A) Thrombin Reagent Not applicable.
- Flash point** : Berichrom® Antithrombin III (A) Buffer Solution [Product does not sustain combustion.]
Berichrom® Antithrombin III (A) Substrate Reagent [Product does not sustain combustion.]
Berichrom® Antithrombin III (A) Thrombin Reagent [Product does not sustain combustion.]
- Flammability (solid, gas)** : Berichrom® Antithrombin III (A) Buffer Solution Not relevant/applicable due to nature of the product.
Berichrom® Antithrombin III (A) Substrate Reagent Not relevant/applicable due to nature of the product.
Berichrom® Antithrombin III (A) Thrombin Reagent Not relevant/applicable due to nature of the product.
- Relative density** : Berichrom® Antithrombin III (A) Buffer Solution 1
Berichrom® Antithrombin III (A) Substrate Reagent Not available.
Berichrom® Antithrombin III (A) Thrombin Reagent Not available.
- Solubility(ies)** :
Not available.

Section 9. Physical and chemical properties

Solubility in water	: Berichrom® Antithrombin III (A) Buffer Solution	Not available.
	: Berichrom® Antithrombin III (A) Substrate Reagent	Not available.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	Not available.
Partition coefficient: n-octanol/water	: Berichrom® Antithrombin III (A) Buffer Solution	Not relevant/applicable due to nature of the product.
	: Berichrom® Antithrombin III (A) Substrate Reagent	Not relevant/applicable due to nature of the product.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	Not relevant/applicable due to nature of the product.
Auto-ignition temperature	: Berichrom® Antithrombin III (A) Buffer Solution	Not available.
	: Berichrom® Antithrombin III (A) Substrate Reagent	Not relevant/applicable due to nature of the product.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	Not relevant/applicable due to nature of the product.
Viscosity	: Berichrom® Antithrombin III (A) Buffer Solution	Not relevant/applicable due to nature of the product.
	: Berichrom® Antithrombin III (A) Substrate Reagent	Not relevant/applicable due to nature of the product.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	Not relevant/applicable due to nature of the product.
<u>Aerosol product</u>		
Type of aerosol	: Berichrom® Antithrombin III (A) Buffer Solution	Not applicable.
	: Berichrom® Antithrombin III (A) Substrate Reagent	Not applicable.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	Not applicable.

Section 10. Stability and reactivity

Reactivity	: Berichrom® Antithrombin III (A) Buffer Solution	No specific test data related to reactivity available for this product or its ingredients.
	: Berichrom® Antithrombin III (A) Substrate Reagent	No specific test data related to reactivity available for this product or its ingredients.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: Berichrom® Antithrombin III (A) Buffer Solution	The product is stable.
	: Berichrom® Antithrombin III (A) Substrate Reagent	The product is stable.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.	
Conditions to avoid	: Berichrom® Antithrombin III (A) Buffer Solution	No specific data.
	: Berichrom® Antithrombin III (A) Substrate Reagent	No specific data.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	No specific data.

Section 10. Stability and reactivity

Incompatible materials	: Berichrom® Antithrombin III (A) Buffer Solution	No specific data.
	: Berichrom® Antithrombin III (A) Substrate Reagent	No specific data.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	No specific data.
Hazardous decomposition products	: Berichrom® Antithrombin III (A) Buffer Solution	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	: Berichrom® Antithrombin III (A) Substrate Reagent	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Berichrom® Antithrombin III (A) Buffer Solution sodium azide	LD50 Dermal	Rabbit	20 mg/kg	-
	LD50 Dermal	Rat	50 mg/kg	-
	LD50 Oral	Rat	27 mg/kg	-

Conclusion/Summary	: Berichrom® Antithrombin III (A) Buffer Solution	Not available.
	: Berichrom® Antithrombin III (A) Substrate Reagent	Not available.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	Not available.

Irritation/Corrosion

Not available.

Conclusion/Summary

Skin	: Berichrom® Antithrombin III (A) Buffer Solution	Not available.
	: Berichrom® Antithrombin III (A) Substrate Reagent	Not available.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	Not available.
Eyes	: Berichrom® Antithrombin III (A) Buffer Solution	Not available.
	: Berichrom® Antithrombin III (A) Substrate Reagent	Not available.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	Not available.
Respiratory	: Berichrom® Antithrombin III (A) Buffer Solution	Not available.
	: Berichrom® Antithrombin III (A) Substrate Reagent	Not available.
	: Berichrom® Antithrombin III (A) Thrombin Reagent	Not available.

Sensitization

Not available.

Conclusion/Summary

Section 11. Toxicological information

Skin : Berichrom® Antithrombin III (A) Buffer Solution Not available.
 Berichrom® Antithrombin III (A) Substrate Reagent Not available.
 Berichrom® Antithrombin III (A) Thrombin Reagent Not available.

Respiratory : Berichrom® Antithrombin III (A) Buffer Solution Not available.
 Berichrom® Antithrombin III (A) Substrate Reagent Not available.
 Berichrom® Antithrombin III (A) Thrombin Reagent Not available.

Mutagenicity

Not available.

Conclusion/Summary : Berichrom® Antithrombin III (A) Buffer Solution Not available.
 Berichrom® Antithrombin III (A) Substrate Reagent Not available.
 Berichrom® Antithrombin III (A) Thrombin Reagent Not available.

Carcinogenicity

Not available.

Conclusion/Summary : Berichrom® Antithrombin III (A) Buffer Solution Not available.
 Berichrom® Antithrombin III (A) Substrate Reagent Not available.
 Berichrom® Antithrombin III (A) Thrombin Reagent Not available.

Reproductive toxicity

Not available.

Conclusion/Summary : Berichrom® Antithrombin III (A) Buffer Solution Not available.
 Berichrom® Antithrombin III (A) Substrate Reagent Not available.
 Berichrom® Antithrombin III (A) Thrombin Reagent Not available.

Teratogenicity

Not available.

Conclusion/Summary : Berichrom® Antithrombin III (A) Buffer Solution Not available.
 Berichrom® Antithrombin III (A) Substrate Reagent Not available.
 Berichrom® Antithrombin III (A) Thrombin Reagent Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Berichrom® Antithrombin III (A) Thrombin Reagent	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Section 11. Toxicological information

Information on the likely routes of exposure	: Berichrom® Antithrombin III (A) Buffer Solution Berichrom® Antithrombin III (A) Substrate Reagent Berichrom® Antithrombin III (A) Thrombin Reagent	Not available. Not available. Not available.
<u>Potential acute health effects</u>		
Eye contact	: Berichrom® Antithrombin III (A) Buffer Solution Berichrom® Antithrombin III (A) Substrate Reagent Berichrom® Antithrombin III (A) Thrombin Reagent	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Inhalation	: Berichrom® Antithrombin III (A) Buffer Solution Berichrom® Antithrombin III (A) Substrate Reagent Berichrom® Antithrombin III (A) Thrombin Reagent	No known significant effects or critical hazards. No known significant effects or critical hazards. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin contact	: Berichrom® Antithrombin III (A) Buffer Solution Berichrom® Antithrombin III (A) Substrate Reagent Berichrom® Antithrombin III (A) Thrombin Reagent	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Ingestion	: Berichrom® Antithrombin III (A) Buffer Solution Berichrom® Antithrombin III (A) Substrate Reagent Berichrom® Antithrombin III (A) Thrombin Reagent	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: Berichrom® Antithrombin III (A) Buffer Solution Berichrom® Antithrombin III (A) Substrate Reagent Berichrom® Antithrombin III (A) Thrombin Reagent	No specific data. No specific data. No specific data.
Inhalation	: Berichrom® Antithrombin III (A) Buffer Solution Berichrom® Antithrombin III (A) Substrate Reagent Berichrom® Antithrombin III (A) Thrombin Reagent	No specific data. No specific data. Adverse symptoms may include the following: wheezing and breathing difficulties asthma
Skin contact	: Berichrom® Antithrombin III (A) Buffer Solution Berichrom® Antithrombin III (A) Substrate Reagent Berichrom® Antithrombin III (A) Thrombin Reagent	No specific data. No specific data. No specific data.
Ingestion	: Berichrom® Antithrombin III (A) Buffer Solution Berichrom® Antithrombin III (A) Substrate Reagent Berichrom® Antithrombin III (A) Thrombin Reagent	No specific data. No specific data. No specific data.

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

Short term exposure

Section 11. Toxicological information

Potential immediate effects : Berichrom® Antithrombin III (A) Buffer Solution Not available.
 Berichrom® Antithrombin III (A) Substrate Reagent Not available.
 Berichrom® Antithrombin III (A) Thrombin Reagent Not available.

Potential delayed effects : Berichrom® Antithrombin III (A) Buffer Solution Not available.
 Berichrom® Antithrombin III (A) Substrate Reagent Not available.
 Berichrom® Antithrombin III (A) Thrombin Reagent Not available.

Long term exposure

Potential immediate effects : Berichrom® Antithrombin III (A) Buffer Solution Not available.
 Berichrom® Antithrombin III (A) Substrate Reagent Not available.
 Berichrom® Antithrombin III (A) Thrombin Reagent Not available.

Potential delayed effects : Berichrom® Antithrombin III (A) Buffer Solution Not available.
 Berichrom® Antithrombin III (A) Substrate Reagent Not available.
 Berichrom® Antithrombin III (A) Thrombin Reagent Not available.

Potential chronic health effects

Not available.

Conclusion/Summary : Not available. Berichrom® Antithrombin III (A) Buffer Solution
 Not available. Berichrom® Antithrombin III (A) Substrate Reagent
 Not available. Berichrom® Antithrombin III (A) Thrombin Reagent

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
Berichrom® Antithrombin III (A) Buffer Solution sodium azide	27	20	N/A	N/A	N/A

Interactive effects : Berichrom® Antithrombin III (A) Buffer Solution Not available.
 Berichrom® Antithrombin III (A) Substrate Reagent Not available.
 Berichrom® Antithrombin III (A) Thrombin Reagent Not available.

Other information : Berichrom® Antithrombin III (A) Buffer Solution Not available.
 Berichrom® Antithrombin III (A) Substrate Reagent Not available.
 Berichrom® Antithrombin III (A) Thrombin Reagent Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Berichrom® Antithrombin III (A) Buffer Solution sodium azide	Acute EC50 9200 µg/l Marine water	Algae - <i>Macrocystis pyrifera</i>	96 hours
	Acute EC50 6.4 mg/l Fresh water	Crustaceans - <i>Simocephalus serrulatus</i> - Larvae	48 hours
	Acute EC50 4.2 mg/l Fresh water	Daphnia - <i>Daphnia pulex</i> - Larvae	48 hours
	Acute LC50 0.68 mg/l Fresh water	Fish - <i>Lepomis macrochirus</i>	96 hours
	Chronic NOEC 5600 µg/l Marine water	Algae - <i>Macrocystis pyrifera</i>	96 hours

Conclusion/Summary	: Berichrom® Antithrombin III (A) Buffer Solution	Not available.
	Berichrom® Antithrombin III (A) Substrate Reagent	Not available.
	Berichrom® Antithrombin III (A) Thrombin Reagent	Not available.

Persistence and degradability

Conclusion/Summary	: Berichrom® Antithrombin III (A) Buffer Solution	Not available.
	Berichrom® Antithrombin III (A) Substrate Reagent	Not available.
	Berichrom® Antithrombin III (A) Thrombin Reagent	Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc})	: Berichrom® Antithrombin III (A) Buffer Solution	Not available.
	Berichrom® Antithrombin III (A) Substrate Reagent	Not available.
	Berichrom® Antithrombin III (A) Thrombin Reagent	Not available.
Mobility	: Berichrom® Antithrombin III (A) Buffer Solution	Not available.
	Berichrom® Antithrombin III (A) Substrate Reagent	Not available.
	Berichrom® Antithrombin III (A) Thrombin Reagent	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. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Sodium azide may react with lead or copper plumbing to form highly explosive metal azides.
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Section 14. Transport information

DOT Classification

UN number	Berichrom® Antithrombin III (A) Buffer Solution	Not regulated.
	Berichrom® Antithrombin III (A) Substrate Reagent	Not regulated.
	Berichrom® Antithrombin III (A) Thrombin Reagent	Not regulated.
UN proper shipping name	Berichrom® Antithrombin III (A) Buffer Solution	-
	Berichrom® Antithrombin III (A) Substrate Reagent	-
	Berichrom® Antithrombin III (A) Thrombin Reagent	-
Transport hazard class(es)	Berichrom® Antithrombin III (A) Buffer Solution	-
	Berichrom® Antithrombin III (A) Substrate Reagent	-
	Berichrom® Antithrombin III (A) Thrombin Reagent	-
Packing group	Berichrom® Antithrombin III (A) Buffer Solution	-
	Berichrom® Antithrombin III (A) Substrate Reagent	-
	Berichrom® Antithrombin III (A) Thrombin Reagent	-
Environmental hazards	Berichrom® Antithrombin III (A) Buffer Solution	No.
	Berichrom® Antithrombin III (A) Substrate Reagent	No.
	Berichrom® Antithrombin III (A) Thrombin Reagent	No.
Additional information	Berichrom® Antithrombin III (A) Buffer Solution	-
	Berichrom® Antithrombin III (A) Substrate Reagent	-
	Berichrom® Antithrombin III (A) Thrombin Reagent	-

TDG Classification

UN number	Berichrom® Antithrombin III (A) Buffer Solution	Not regulated.
	Berichrom® Antithrombin III (A) Substrate Reagent	Not regulated.
	Berichrom® Antithrombin III (A) Thrombin Reagent	Not regulated.
UN proper shipping name	Berichrom® Antithrombin III (A) Buffer Solution	-
	Berichrom® Antithrombin III (A) Substrate Reagent	-
	Berichrom® Antithrombin III (A) Thrombin Reagent	-
Transport hazard class(es)	Berichrom® Antithrombin III (A) Buffer Solution	-
	Berichrom® Antithrombin III (A) Substrate Reagent	-
	Berichrom® Antithrombin III (A) Thrombin Reagent	-
Packing group	Berichrom® Antithrombin III (A) Buffer Solution	-
	Berichrom® Antithrombin III (A) Substrate Reagent	-
	Berichrom® Antithrombin III (A) Thrombin Reagent	-
Environmental hazards	Berichrom® Antithrombin III (A) Buffer Solution	No.
	Berichrom® Antithrombin III (A) Substrate Reagent	No.
	Berichrom® Antithrombin III (A) Thrombin Reagent	No.
Additional information	Berichrom® Antithrombin III (A) Buffer Solution	-
	Berichrom® Antithrombin III (A) Substrate Reagent	-
	Berichrom® Antithrombin III (A) Thrombin Reagent	-

ADR/RID

UN number	Berichrom® Antithrombin III (A) Buffer Solution	Not regulated.
	Berichrom® Antithrombin III (A) Substrate Reagent	Not regulated.
	Berichrom® Antithrombin III (A) Thrombin Reagent	Not regulated.
UN proper shipping name	Berichrom® Antithrombin III (A) Buffer Solution	-
	Berichrom® Antithrombin III (A) Substrate Reagent	-
	Berichrom® Antithrombin III (A) Thrombin Reagent	-

Section 14. Transport information

Transport hazard class(es)	Berichrom® Antithrombin III (A) Buffer Solution	-
	Berichrom® Antithrombin III (A) Substrate Reagent	-
	Berichrom® Antithrombin III (A) Thrombin Reagent	-
Packing group	Berichrom® Antithrombin III (A) Buffer Solution	-
	Berichrom® Antithrombin III (A) Substrate Reagent	-
	Berichrom® Antithrombin III (A) Thrombin Reagent	-
Environmental hazards	Berichrom® Antithrombin III (A) Buffer Solution	No.
	Berichrom® Antithrombin III (A) Substrate Reagent	No.
	Berichrom® Antithrombin III (A) Thrombin Reagent	No.
Additional information	Berichrom® Antithrombin III (A) Buffer Solution	-
	Berichrom® Antithrombin III (A) Substrate Reagent	-
	Berichrom® Antithrombin III (A) Thrombin Reagent	-

IMDG

UN number	Berichrom® Antithrombin III (A) Buffer Solution	Not regulated.
	Berichrom® Antithrombin III (A) Substrate Reagent	Not regulated.
	Berichrom® Antithrombin III (A) Thrombin Reagent	Not regulated.
UN proper shipping name	Berichrom® Antithrombin III (A) Buffer Solution	-
	Berichrom® Antithrombin III (A) Substrate Reagent	-
	Berichrom® Antithrombin III (A) Thrombin Reagent	-
Transport hazard class(es)	Berichrom® Antithrombin III (A) Buffer Solution	-
	Berichrom® Antithrombin III (A) Substrate Reagent	-
	Berichrom® Antithrombin III (A) Thrombin Reagent	-
Packing group	Berichrom® Antithrombin III (A) Buffer Solution	-
	Berichrom® Antithrombin III (A) Substrate Reagent	-
	Berichrom® Antithrombin III (A) Thrombin Reagent	-
Environmental hazards	Berichrom® Antithrombin III (A) Buffer Solution	No.
	Berichrom® Antithrombin III (A) Substrate Reagent	No.
	Berichrom® Antithrombin III (A) Thrombin Reagent	No.
Additional information	Berichrom® Antithrombin III (A) Buffer Solution	-
	Berichrom® Antithrombin III (A) Substrate Reagent	-
	Berichrom® Antithrombin III (A) Thrombin Reagent	-

IATA

UN number	Berichrom® Antithrombin III (A) Buffer Solution	Not regulated.
	Berichrom® Antithrombin III (A) Substrate Reagent	Not regulated.
	Berichrom® Antithrombin III (A) Thrombin Reagent	Not regulated.
UN proper shipping name	Berichrom® Antithrombin III (A) Buffer Solution	-
	Berichrom® Antithrombin III (A) Substrate Reagent	-
	Berichrom® Antithrombin III (A) Thrombin Reagent	-
Transport hazard class(es)	Berichrom® Antithrombin III (A) Buffer Solution	-
	Berichrom® Antithrombin III (A) Substrate Reagent	-
	Berichrom® Antithrombin III (A) Thrombin Reagent	-
Packing group	Berichrom® Antithrombin III (A) Buffer Solution	-
	Berichrom® Antithrombin III (A) Substrate Reagent	-
	Berichrom® Antithrombin III (A) Thrombin Reagent	-
Environmental hazards	Berichrom® Antithrombin III (A) Buffer Solution	No.
	Berichrom® Antithrombin III (A) Substrate Reagent	No.
	Berichrom® Antithrombin III (A) Thrombin Reagent	No.

Section 14. Transport information

Additional information Berichrom® Antithrombin III (A) Buffer Solution -
Berichrom® Antithrombin III (A) Substrate Reagent -
Berichrom® Antithrombin III (A) Thrombin Reagent -

Special precautions for user : Berichrom® Antithrombin III (A) Buffer Solution

Berichrom® Antithrombin III (A) Substrate Reagent

Berichrom® Antithrombin III (A) Thrombin Reagent

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 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 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 IMO instruments : Not applicable.

Section 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: 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		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
Berichrom® Antithrombin III (A) Buffer Solution sodium azide	0.0992	Yes.	500	-	1000	-

SARA 304 RQ : 2096774.2 lbs / 951935.5 kg

SARA 311/312

Classification : RESPIRATORY SENSITIZATION - Category 1

Composition/information on ingredients

Section 15. Regulatory information

Name	%	Classification
Berichrom® Antithrombin III (A) Buffer Solution sodium azide	≤0.1	ACUTE TOXICITY (oral) - Category 2 ACUTE TOXICITY (dermal) - Category 1
Berichrom® Antithrombin III (A) Thrombin Reagent Thrombin	≤0.3	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

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.

California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Section 16. Other information

History

Date of issue/Date of revision : 3/19/2024

Version : 1

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 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations N/A = Not available SGG = Segregation Group

▣ Indicates information that has changed from previously issued version.