



Ordering Information

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Spectra/Por® Heavy Metals Cleaning & Sulfide Removal Solutions



Cleaning Membranes

Spectra/Por® 1 to 5 Regenerated Cellulose (RC) Membranes are shipped dry and are preserved with a glycerol treatment, while Spectra/Por® 6 RC membranes are packaged wet in 0.1% sodium azide preservative. For general use, RC Membranes should be washed with deionized water. There are trace amounts of heavy metals and sulfur which can be removed by using Spectra/Por® Heavy Metals Cleaning Kit and Spectra/Por® Sulfide Removal Kit.

When using Spectra/Por® membranes for critical work, it is sometimes necessary to remove sulfides or heavy metals.

Heavy Metal Cleaning Solution

When using Spectra/Por® membranes, the removal of sulfides or heavy metals is sometimes necessary. In normal use, Spectra/Por® membranes should be washed with distilled water and used without additional cleaning. However, traces of heavy metal ions are present in Spectra/Por® 1 through 6 in approximately the following amounts:

Cd	<1 ppm
Fe	20-60 ppm
Pb	2-6 ppm
Cr	<1 ppm
Mg	50-100 ppm
Zn	5-10 ppm
Cu	<1 ppm
Ni	1-2 ppm
S	0.1%



For ultracritical work, chelate wash the membrane with Spectra/Por® Heavy Metals Cleaning Solution. It is an EDTA based solution.

Ordering Information

Part No.	Description
132908	Heavy Metals Cleaning Kit, 8oz.

Sulfide Removal Solution

Spectra/Por® Membranes have 0.1% sulfur present from the manufacturing process which requires removal only if its presence might interfere with the subsequent analysis of dialysate or retentate.

Directions: Dilute solution A with two parts H₂O to one part cleaning solution A. Gently wash membrane to be cleaned for one minute at 80°C in diluted solution A. Then wash membrane with distilled or deionized water at 60°C for two minutes and add 2 mL of solution B per 50 mL of total solution. Mix thoroughly for one minute. Complete washing by rinsing in distilled water for several minutes.



Ordering Information

Part No.	Description
132906	Sulfide Removal Kit Solution A, 8 oz. Solution B, 8 oz.

Material Safety Data Sheet: Sulfur Cleaning Solution A

This sheet information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Spectrum shall not be held liable for any damage resulting from handling or from contact with the product.

Material: Sulfur Cleaning Solution A 132906	CAS Number: 7757-83-7	Date Issued April 1, 2000
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Chemical Characteristics

Sodium Sulfite in water

I. Ingredients

	Weight (%)
Sodium Sulfite(CAS# 7757-83-7)	1
H ₂ O (CAS# 7732-18-5)	99

II. Physical Data

Form:	Liquid
Color:	Clear/Colorless
Solubility in water:	completely
Specific gravity (water=1.0)	1.0

III. Fire and Explosion Hazard Data

Unusual Fire Explosion Hazards: Combustion products are toxic and may include sulfur oxides and sodium oxide.

Flammability (NFPA rating): 0

Material is non-combustible. Use extinguishing media appropriate to surrounding fire conditions.

IV. Reactivity Data

Incompatible with metals, acids and strong oxidizers.
Hazardous polymerization will not occur.

Reactivity (NFPA rating): 0

Hazardous decomposition or combustion products: sulfur oxides.

V. Spill or Leak Procedure

In case of spill or leak, wipe up spill and discard wiper or flush the solution down the drain with plenty of water.

VI. Health Hazard Data

Effects of Exposure:

Acute Effects: Harmful if swallowed. Some individuals are dangerously sensitive to ingesting sulfites. May cause gastric irritation. Causes skin, respiratory and eye irritation.

Chronic Effects: None known. To the best of our knowledge the chemical, physical and toxicological properties of this material have not been thoroughly investigated.

Health (NFPA rating): 1

VII. First Aid

Eye & Skin contact: In case of contact, immediately flush eyes or skin with copious amounts of water for at least 15 minutes.

Ingestion: If swallowed and victim is conscious, immediately drink large amounts of water. *Call physician immediately.*

VIII. Handling and Storage Precautions

Chemical safety goggles.
Compatible chemical-resistant gloves.
Safety shower and eye bath.
Avoid inhalation.
Avoid contact with eyes, skin and clothing.
Avoid prolonged or repeated exposure.
Wash thoroughly after handling.
Keep tightly closed.
Store in a cool, dry place.

IX. Waste Disposal Method

Flush the solution down the drain with plenty of water.
Observe all federal, state and local laws.

X. Transportation Information

Not regulated.

XI. Miscellaneous Information

The information contained herein is based on data considered accurate; however no warranty is expressed or implied regarding the accuracy of this data or the results obtained from the use thereof.

Vendor assumes no responsibility for the injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered as stipulated in the datasheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

Material Safety Data Sheet: Sulfur Cleaning Solution B

This sheet information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Spectrum shall not be held liable for any damage resulting from handling or from contact with the product.

Material:	CAS Number:	Date Issued
Sulfur Cleaning Solution B 132906	7664-93-9	April 1, 2000

Chemical Characteristics

Sulfuric Acid in water

I. Ingredients

	CAS No.	Wgt (%)	OSHA PEL	ACGIH TLV	LD ₅₀ (mg/kg)
Sulfuric Acid (H ₂ SO ₄)	7664-93-9	0.4	1 mg/m ³	1mg/m ³	135 (UNR-MAN)
Deionized Water (H ₂ O)	7732-18-5	99.6	629,000 (ORL-DOG)		

II. Physical Data

Form:	Liquid
Color:	Clear/Colorless
Odor:	Odorless
Boiling Point @ 750 mm Hg	>100°C
Freezing Point	<0°C
pH @ 25°C	1.0-1.5
Solubility in water:	miscible
Evaporation Rate (butyl acetate = 1)	N/A
Specific gravity (water=1.0):	1.0

NFPA rating (scale: 0-4): Health (2), Fire (0), Reactivity (0), Specific-Acid

III. Fire and Explosion Hazard Data

Flash Point	N/A
Auto Ignition Temperature:	N/A
Lower Explosion Limit (%)	N/A
Upper Explosion Limit (%)	N/A

Extinguishing Media: 4 Dry Chemical

Special Fire-Fighting Procedures: Self-contained breathing apparatus should be worn

Unusual Fire Explosion Hazards: This solution is not combustible but will react with other chemicals (Hydroxides) and even water.

IV. Reactivity Data

Incompatible with [and avoid] metals, organic acids and fulminates. Hazardous polymerization will not occur.

Hazardous decomposition or combustion products: Toxic gases and vapors may be released when sulfuric acid decomposes.

V. Spill or Leak Procedure

Dilute pH to neutral and flush down drain.

VI. Health Hazard Data

Effects of Exposure:

Acute Effects: Harmful if swallowed. May cause irritation of eyes, nose, throat, and/or skin.

Chronic Effects: May cause burns, erode teeth, cause the mouth to become sore, chronic irritation or inflammation of the nose and throat.

VII. First Aid

Consult physician for all modes of exposure

Eye contact: In case of contact, flush eyes with water for at least 15 minutes.

Skin contact: Wash skin with water.

Inhalation: Fresh air and artificial respiration.

Ingestion: If swallowed, immediately drink large amounts of water. *Get medical attention immediately.*

VIII. Handling and Storage Precautions

Chemical safety goggles and lab coat.
Compatible chemical-resistant gloves.
Safety shower and eye bath.
Avoid inhalation.
Avoid contact with eyes, skin and clothing.
Avoid prolonged or repeated exposure.
Wash thoroughly after handling.
Keep tightly closed.
Store in a cool, dry place.

IX. Waste Disposal Method

Consult and observe all federal, state and local laws when disposing of this product.

X. Miscellaneous Information

The information contained herein is based on data considered accurate; however no warranty is expressed or implied regarding the accuracy of this data or the results obtained from the use thereof.

Vendor assumes no responsibility for the injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.