



## **BHS POCKET LEAF FILTER 400-TANTALINE RENTAL & PURCHASE QUOTATION**

### **SPECIFICATIONS**

1. All wetted parts to be Tantaline-treated for maximum corrosion resistance
2. Corrosion resistance shown on pages 4 – 5
3. Filter area: 20 cm<sup>2</sup>
4. Process Volume: 400 ml
5. Jacket Volume: 200 ml
6. Operating Pressure Vessel: 6 barg/FV (maximum)
7. Operating Pressure Jacket: 4 barg
8. Maximum cake thickness: 150 mm
9. Design temperature Vessel: 200 degrees C
10. Design temperature Jacket: 200 degrees C
11. Dimensions: 24 inches tall x 5 inches wide
12. Weight (empty): 5.2 kg



**COMMERCIAL:**

**Purchase Price:** \$11,556.00

**Shipment:** 6 – 8 weeks ARO

**Weekly Rental:** \$500 / week with a minimum of a two week rental

Lease term begins when filter arrives onsite and ends when rental filter is picked up for return shipment back to Lessor. This is a week-to-week lease and not a sale. Title remains at all times with Lessor (BHS-Sonthofen Inc.).

**Shipment:** 6 – 8 weeks ARO

**Payment Terms:** 100% due at time of invoicing at the end of the rental period

**Spare Parts:** Any spare parts, such as seals required during the rental period will be ordered by the Lessee through BHS-Sonthofen Inc. Costs for the spare parts will be the responsibility of the Lessee.

**BHS Assistance:** BHS process engineers are available for training, process testing, etc. at “actual expenses” only

**Validity:** Through calendar year 2018

**Rental Period:** To be agreed

**Dispatch:** All shipping expenses and risk of loss to/from Lessor’s designated points are Lessee’s sole responsibility.

**Terms:** BHS-Sonthofen Inc., “Terms and Conditions of Sales and Service”

**Cleaning Procedures:** To be provided by Lessee including MSDS sheets. The rental unit is to be cleaned with zero residual product.

**Installation:** Equipment will be delivered to the client’s site. Client is responsible for installation and all process connections and piping.



**Use and Maintenance:**

Lessee will use the Equipment only in accordance with Lessor's operating, maintenance and safety instructions and, at its expense, will keep the Equipment in good repair with reasonable wear and tear expected, replacing all parts as necessary with spare parts purchased from Lessor.

**Warranty:**

The Equipment is leased AS IS. Lessor does not extend any warranty, express or implied, including the implied warranties of title, fitness for a particular purpose and merchantability.

**Liability and Indemnification:**

Lessor shall not be liable in damages to Lessee for any amount for any reason. Lessee shall indemnify and, at Lessor's request, defend Lessor against any and all liability and expense, including attorneys' fees, incurred as a result of any claim arising out of or related to Lessee's use of the Equipment.

**Insurance and Risk:** All risk of loss or damage is Lessee's responsibility. Lessee shall insure the Equipment against loss and liability for its Replacement Value and not less than \$12,000.00 respectively, and shall have Lessor named as loss payee/additional insured as appropriate.

**Remedies on Default:**

Lessor may enter on Lessee's premises and repossess the Equipment at any time in the event Lessee fails to observe any obligation hereunder in addition to any other remedy available.

**Miscellaneous:**

Lessee may not assign or sublet this Agreement. This is the complete agreement between the parties. All disputes shall be governed by North Carolina and adjudicated exclusively in the North Carolina General Courts of Justice, Superior Court Division, Charlotte, NC and each party consents to its jurisdiction.

Agreed to by:

*Barry A. Perlmutter*

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BHS-Sonthofen Inc.  
Barry A. Perlmutter,  
President & Managing Director  
Date:

\_\_\_\_\_  
Company:  
By:  
Title:  
Date:

Media where Tantaline® shows immunity — the immunity is valid up to at least 150°C (302°F), unless otherwise noted:

Acetic acid, CH <sub>3</sub> COOH	Ethyl sulfate, C <sub>2</sub> H <sub>5</sub> O <sub>4</sub> S	Phosphoric acid, <4ppmF, <180°C, H <sub>3</sub> PO <sub>4</sub>
Acetic anhydride, (CH <sub>3</sub> CO) <sub>2</sub> O	Fatty acids, R-COOH	Phosphorus, <700°C (1290°F), P
Acetone, CH <sub>3</sub> COCH <sub>3</sub>	Ferric chloride, FeCl <sub>3</sub>	Phosphorus chlorides, PCl <sub>3</sub>
Air, <300°C (570°F)	Ferric sulfate, Fe <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	Phosphorus oxychloride, POCl <sub>3</sub>
Alcohols, R-OH	Ferrous sulfate, FeSO <sub>4</sub>	Phthalic anhydride, C <sub>8</sub> H <sub>4</sub> O <sub>3</sub>
Aldehydes, R-CHO	Food stuffs	Pickling acids, except HNO <sub>3</sub> -HF
Aluminum chloride, AlCl <sub>3</sub>	Formaldehyde, HCHO	Potassium bromide, KBr
Aluminum nitrate, Al(NO <sub>3</sub> ) <sub>3</sub>	Formic acid, HCOOH	Potassium chloride, KCl
Aluminum sulfate, Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	Fruits	Potassium dichromate, K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>
Amines, R-NH <sub>2</sub>	Glycerine, CH <sub>2</sub> OHCHOHCH <sub>2</sub> OH	Potassium ferricyanide, K <sub>3</sub> Fe(CN) <sub>6</sub>
Ammonium bicarbonate, NH <sub>4</sub> CO <sub>3</sub>	Graphite, <1000°C, C	Potassium iodide, KI
Ammonium carbonate, (NH <sub>4</sub> ) <sub>2</sub> CO <sub>3</sub>	Hydroiodic acid, HI	Potassium nitrate, KNO <sub>3</sub>
Ammonium chloride, NH <sub>4</sub> Cl	Hydrobromic acid, HBr	Potassium permanganate, KMnO <sub>4</sub>
Ammonium nitrate, NH <sub>4</sub> NO <sub>3</sub>	Hydrocarbons, HxCy	Potassium sulfate, K <sub>2</sub> SO <sub>4</sub>
Ammonium acid fosfate, NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub>	Hydrochloric acid, HCl	Potassium thiosulfate, K <sub>2</sub> S <sub>2</sub> O <sub>3</sub>
Ammonium fosfate, (NH <sub>4</sub> ) <sub>3</sub> PO <sub>4</sub>	Hydrogen bromide, <400°C, HBr	Propionic acid, C <sub>2</sub> H <sub>3</sub> COOH
Ammonium sulfate, (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	Hydrogen chloride, <350°C, HCl	Refrigerants
Amyl acetate, C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	Hydrogen iodide, HI	Sea water
Amyl chloride, C <sub>5</sub> H <sub>11</sub> Cl	Hydrogen peroxide, H <sub>2</sub> O <sub>2</sub>	Silver nitrate, AgNO <sub>3</sub>
Aniline hydrochloride C <sub>6</sub> H <sub>5</sub> NH <sub>2</sub> ·HCl	Hydrogen sulfide, H <sub>2</sub> S	Sodium acetate, NaCH <sub>3</sub> COO
Aqua regia, HCl-HNO <sub>3</sub> mixture	Hydroxyacetic acid, CH <sub>2</sub> OHCOOH	Sodium aluminate, NaAlO <sub>2</sub>
Barium carbonate, BaCO <sub>3</sub>	Hypochlorous acid, HClO	Sodium bisulfate, solution, NaHSO <sub>4</sub>
Barium chloride, BaCl <sub>2</sub>	Iodine, <300°C (570°F), I <sub>2</sub>	Sodium bromide, NaBr
Barium hydroxide, Ba(OH) <sub>2</sub>	Ketones, R-CO-R	Sodium chlorate, NaClO <sub>3</sub>
Barium nitrate, Ba(NO <sub>3</sub> ) <sub>2</sub>	Lactic acid, CH <sub>3</sub> CH(OH)CO <sub>2</sub> H	Sodium chloride, NaCl
Benzoic acid, C <sub>6</sub> H <sub>5</sub> COOH	Lead salts	Sodium citrate, Na <sub>3</sub> CH(COO) <sub>3</sub>
Body fluids	Magnesium chloride, MgCl <sub>2</sub>	Sodium cyanide, NaCN
Boric acid, H <sub>3</sub> BO <sub>3</sub>	Magnesium hydroxide, Mg(OH) <sub>2</sub>	Sodium dichromate, Na <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>
Bromine, dry, <300°C (570°F), Br <sub>2</sub>	Magnesium sulfate, MgSO <sub>4</sub>	Sodium hypochlorite, NaClO
Bromine, wet, Br <sub>2</sub>	Maleic acid, C <sub>4</sub> H <sub>4</sub> O <sub>4</sub>	Sodium nitrate, NaNO <sub>3</sub>
Butyric acid, C <sub>3</sub> H <sub>7</sub> COOH	Manganous chloride, MnCl <sub>2</sub>	Sodium nitrite, NaNO <sub>2</sub>
Calcium bicarbonate, Ca(HCO <sub>3</sub> ) <sub>2</sub>	Methyl alcohol, CH <sub>3</sub> OH	Sodium fosfate, Na <sub>3</sub> PO <sub>4</sub>
Calcium bisulfates, Ca(HSO <sub>4</sub> ) <sub>2</sub>	Methylsulfuric acid, (CH <sub>3</sub> ) <sub>2</sub> HSO <sub>4</sub>	Sodium silicate, Na <sub>2</sub> SiO <sub>4</sub>
Calcium bisulfites, Ca(HSO <sub>3</sub> ) <sub>2</sub>	Milk	Sodium sulfate, Na <sub>2</sub> SO <sub>4</sub>
Calcium carbonate, CaCO <sub>3</sub>	Mineral oils	Sodium sulfide, Na <sub>2</sub> S
Calcium chloride, CaCl <sub>2</sub>	Mixed acids (sulfuric-nitric), H <sub>2</sub> SO <sub>4</sub> -HNO <sub>3</sub>	Sodium sulfite, Na <sub>2</sub> SO <sub>3</sub>
Calcium hydroxide, Ca(OH) <sub>2</sub>	Motor fuels	Sodium thiosulfate, Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>
Calcium hypochlorite, CaOCl <sub>2</sub>	Nickel salts	Stearic acid, c <sub>17</sub> H <sub>35</sub> CO <sub>2</sub> H
Carboxylic acids, R-COOH	Nitric acid, HNO <sub>3</sub>	Succinic acid, C <sub>4</sub> H <sub>6</sub> O <sub>4</sub>
Carbon dioxide, CO <sub>2</sub>	Nitric acid, fuming, HNO <sub>3</sub>	Sugar
Chloric acid, HClO <sub>3</sub>	Nitric oxide, NO <sub>2</sub>	Sulfamic acid, H <sub>3</sub> NSO <sub>3</sub>
Chlorinated brine	Nitrogen, <300°C (570°F), N <sub>2</sub>	Sulfur, <500°C (930°F), S
Chlorine, dry, <250°C (480°F) Cl <sub>2</sub>	Nitrous acid, HNO <sub>2</sub>	Sulfur chlorides, SxCl <sub>2</sub>
Chlorine, wet, <350°C (662°F) Cl <sub>2</sub>	Nitrosyl chloride, NOCl	Sulfur dioxide, SO <sub>2</sub>
Chlorine oxides	Organic chlorides, R-Cl	Sulfuric acid, to 175°C (350°F), H <sub>2</sub> SO <sub>4</sub>
Chloroacetic acid, CH <sub>2</sub> ClCOOH	Organic acids, R-COOH	Sulfurous acid, H <sub>2</sub> SO <sub>3</sub>
Chromic acid, H <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	Organic esters, R-COO-R'	Sulfuryl chloride, SO <sub>2</sub> Cl <sub>2</sub>
Chrome plating solutions	Organic salts	Tannic acid C <sub>26</sub> H <sub>34</sub> O <sub>46</sub>
Citric acid, C <sub>6</sub> H <sub>8</sub> O <sub>7</sub>	Oxalic acid, (COOH) <sub>2</sub>	Tartaric acid, C <sub>4</sub> H <sub>6</sub> O <sub>6</sub>
Cleaning solutions	Oxygen, <300°C (570°F), O <sub>2</sub>	Thionyl chloride, SOCl <sub>2</sub>
Copper salts	Perchloric acid, HClO <sub>4</sub>	Tin salts
Dichloroacetic acid, CHCl <sub>2</sub> COOH	Petroleum products	Zinc chloride, ZnCl <sub>2</sub>
Dimethyl formamide, (CH <sub>3</sub> ) <sub>2</sub> CNH <sub>2</sub>	Phenol/Carbolic acid, C <sub>6</sub> H <sub>5</sub> OH	Zinc sulfate, ZnSO <sub>4</sub>
Ethylene dibromide, C <sub>2</sub> H <sub>2</sub> Br <sub>2</sub>		



# Corrosion Charts

These charts show the conditions under which various metals will corrode at a fixed rate of 5 mils per year (mpy). Tantalum by far outperforms other specialty metals and alloys.

