

SKY ENTERPRISE, INC.  
 BOILER WATER SYSTEMS  
PRODUCT AND APPLICATION SUMMARY

<u>Formula Number</u>	<u>Description</u>
AS-4240	Anti-static for air quality control
AS-4241	Anti-static for air quality control
BT-600	Liquid blends of alkalinity builders/polymers and sulfite designed as one of the single drum "All Organic" type formulations. Typical control is by 'P' alkalinity in the range of 300-600 ppm. Sulfite should be adequate in most systems where feedwater temperature is >150°F. However, sulfite should be monitored. Specify "F" for FDA & USDA.
BT-7000(F) BT-7001(F) BT-7002(F) BT-7003(F) BT-7004(F)	Products in this series are liquid combinations of low molecular weight carboxylated copolymer designed for use as dispersants in boiler water applications. These products have proven for several years to be among the most effective available in the marketplace. Products are used both as the sole polymer source for carbonate, chelant and phosphate programs and as supplements to other products when higher polymer levels are desirable. BT 7001-7004 also contain the high temperature boiler water antifoam.  All products for applications in FDA or USDA regulated facilities must be designated with an "F".
BT-7010 BT-7011 BT-7012	Products are modifications of our very popular BT-7000 series to include a molybdate tracer. Product feed rates are controlled in normal ranges by keeping the molybdate (as Sodium Molybdate) in the 2-8 ppm range.  Products are particularly applicable in systems operating with softened water makeup on the carbonate ("All Organic", "Transport Plus") type programs where there is no phosphate or chelant to trace polymer levels. None of the products contain antifoam. The products cannot be used in FDA or USDA regulated facilities.
BT-7015 BT-7016 BT-7017	Products are modifications of the BT-7010 series for use where boiler water alkalinities might not develop to desired levels due to low alkalinity makeup water. Like the BT-7010 series, the products cannot be FDA and USDA regulated facilities.  With the molybdate controlled in the 2-8 ppm range, the approximate increase in boiler water 'P' alkalinities will be: BT-7015 & BT-7017.....40 - 160 ppm as CaCO <sub>3</sub> BT- 7016.....80 - 320 ppm as CaCO <sub>3</sub>

SKY ENTERPRISE, INC.  
BOILER WATER SYSTEMS  
PRODUCT AND APPLICATION SUMMARY

<u>Formula Number</u>	<u>Description</u>
BT-7035 BT-7036 BT-7037	Formulations in this series are special blends of phosphonate with polymeric dispersants designed specifically for applications where gradual cleaning of old deposits is required. The product is also excellent in systems having hard water makeup. The feed of the products are controlled by a molybdate test on the boiler water in the range of 2-6 ppm. Do not overfeed or adverse reactions are possible.
BT-7050 BT-7051 BT-7052 BT-7054	Concentrated blends of alkalinity builders and polymers designed to be the basic products used for the "All Organic" treatment in boiler systems operated with unsoftened makeup water. Typical control is by 'P' alkalinity test in the range of 300-600 ppm. The additional feed of sulfite and amines will be required in most plants. BT-7054 is for use where raw water has a high 'M' alkalinity. Specify "F" for FDA and USDA plants.
BT-7060/BT-3060 BT-7061 BT-7062	Liquid blends of alkalinity builders/polymers and sulfite designed as one of the single drum "All Organic" type formulations. Typical control is by 'P' alkalinity in the range of 300-600 ppm. Sulfite should be adequate in most systems where the feedwater temperature is >150°F. However, sulfite should be monitored. Specify "F" for FDA and USDA.
BT-7070 BT-7071 BT-7072 BT-7075 BT-7076 BT-7077	A blend of alkalinity builders/polymers/sulfite and neutralizing amine, single drum, "All Organic" treatment for low pressure boilers. Typical control is by 'P' alkalinity in the range of 300-600 ppm. The BT-7070 series is for systems with high condensate returns while the BT-7075 series is for systems having higher makeup requirements or lower feedwater temperature. Specify "F" for FDA and USDA plants.
BT-7090	Powdered alkalinity builder (soda ash) offering maximum safety and ease of handling. Not recommended where high condensate returns are used due to the additional CO <sub>2</sub> added to the system.
BT-7091	Powdered alkalinity builder (caustic soda) to be used in most systems where maximum economy and operator handling safety are required.
BT-7092 BT-7093/BT-3093	Liquid alkalinity builders (caustic based) to be used where maximum economy is required. Operators must be skilled in safety precautions when handling caustic solutions.
BT-7140	A powdered polyphosphate for boiler water treatment. Used in large systems with separate dispersant feed when economics is a prime concern. Specify "F" for USDA plants.

SKY ENTERPRISE, INC.  
BOILER WATER SYSTEMS  
PRODUCT AND APPLICATION SUMMARY

<u>Formula Number</u>	<u>Description</u>
BT-7141	A powdered mixture of poly and orthophosphates for use in large, low pressure systems where the reversion of poly to orthophosphate may not occur rapidly enough to assure the desired reactions. When used in systems employing unsoftened makeup water, must be fed to the boiler drum and not the feedwater. Specify "F" for USDA plants. Also, the acid/alkaline PO <sub>4</sub> ratio in this formula may make it the basic phosphate choice for coordinated PO <sub>4</sub> control programs.
BT-7142	Powdered alkaline orthophosphate for use in a coordinated phosphate/pH control program. Most often used with BT-7145 for optimum coordination.
BT-7145	A highly concentrated liquid polyphosphate for boiler water treatment. Used in large systems with separate dispersant feed when economics is a prime concern. Specify "F" for USDA plants.
BT-7150 BT-7151 BT-7152 BT-7154	Liquid blends of phosphate/EDTA/polymers formulated as the basic products for a "Controlled Precipitation" program as now preferred by boiler manufacturers and users as the safest, most effective type program for the very high heat transfer package unit. Products are controlled by the standard orthophosphate test and the typical range is 10-30 ppm PO <sub>4</sub> in the boiler water. <b><u>However, care must be taken where makeup water supplies contain phosphate or product underfeed could result in substandard results in the treated systems.</u></b> In these systems, it will be necessary to set the minimum residual high enough to compensate for the residual from the incoming phosphate <u>or</u> feed a ratioed amount of a BT-7200 series product.
BT-7160 BT-7161 BT-7162	The latest in phosphate technology for boiler water treatment is low phosphate, high polymer. The BT-7160 series is formulated to take advantage of this technology. The products are designed for systems employing softened makeup water (<5 ppm hardness) and are typically fed to maintain 10-30 ppm phosphate (as PO <sub>4</sub> ) in the boiler water. The lower residual in the water provides less driving force to the calcium phosphate reaction and the precipitate which results is better dispersed for removal by blowdown.
BT-7170 BT-7171 BT-7172 BT-7175 BT-7176 BT-7177	The formulations in this series, like the BT-7160 series are designed to take advantage of the low phosphate, high polymer technology. In addition to the phosphate and polymer, the products contain sulfite and for systems operating with a deaerating heater or very high feedwater temperature, additional sulfite probably will not be required in the program. Feed the products to maintain a 10-30 ppm PO <sub>4</sub> in the boiler water. The BT-7175 series contain extra alkalinity builders for systems having a low alkalinity makeup water.

SKY ENTERPRISE, INC.  
BOILER WATER SYSTEMS  
PRODUCT AND APPLICATION SUMMARY

<u>Formula Number</u>	<u>Description</u>
BT-7180 BT-7181 BT-7182 BT-7185 BT-7186 BT-7187	The formulations in this series are like the BT-7160 series but also contain DEAE as a neutralizing amine. Thus, they can be considered as one drum treatments in those systems where this type of product is required. Again, they are low phosphate, high polymer formulations designed to be run with a 10-30 ppm PO <sub>4</sub> residual in the boiler water. The amount of sulfite and amine should be adequate in most systems having high condensate returns. Again, the BT-7185 series contain additional alkalinity for those systems requiring additional alkalinity.
BT-7200 BT-7201 BT-7202 BT-7203 BT-7204 BT-7205	Liquid EDTA/Polymer blends for the treatment of boiler feedwater having a total hardness of 0.8-2.0 ppm. Primary application will be in high heat transfer (package water tube) boilers such as B. & W. FM's and C.E. VU's and where very close operator control over the program is available. Best control over the feed should be based on feedwater demand or microhardness. Boiler residual in the range of 0 - +15 ppm can be used as long as feedwater demand/micro-hardness is also periodically monitored.
BT-7240	A concentrated solution of EDTA for the treatment of boiler feedwater. Primarily used for EDTA cleanup programs although it is sometimes applied with BT-7000 or BT-7010 series dispersants to provide the most economical EDTA based program. Continuous application should be limited to critical, high heat transfer applications where very close operator control is possible. May also be used as the EDTA source for a "Controlled Precipitation" PO <sub>4</sub> /chelant program.
BT-7300	Powdered sodium sulfite for use in systems where the sulfite is mixed with other treatment chemicals and/or where a catalyzed material is not required. May be used in FDA regulated facilities but not in USDA.
BT-7301-F	Powdered, decharacterized sodium sulfite for use in USDA regulated facilities.
BT-7302	Highly concentrated (acidic) liquid sulfite for use in plants desiring economy but also a liquid product for ease of handling. Corrosive to feed systems when used alone but may be mixed easily with other alkaline boiler products and fed together when desired. Specify "F" for FDA applications.
BT-7303	Concentrated liquid sodium sulfite solution for use in smaller facilities requiring a liquid product and ease of handling by operating personnel. Specify "F" for FDA and USDA applications.
BT-7305	Powdered, catalyzed sodium sulfite for use in most larger facilities where the sulfite is fed separately to the deaerating heater (a must where economizers are employed) or feed-water heater. Cannot be mixed and fed with other alkaline boiler chemicals or the catalyst will be deactivated.

SKY ENTERPRISE, INC.  
BOILER WATER SYSTEMS  
PRODUCT AND APPLICATION SUMMARY

<u>Formula Number</u>	<u>Description</u>
BT-7306-F	Catalyzed, decharacterized sodium sulfite for use in USDA regulated facilities. Use guidelines the same as for BT-7305.
BT-7307	Catalyzed, highly concentrated liquid (acidic) sulfite for use in plants requiring a liquid, yet catalyzed material. Care must be used in the selection of the feed equipment as the material is a mild acid and is corrosive to carbon steel and certain other metallurgies. Also, the product will reduce the feedwater alkalinity by about 0.5 ppm for each ppm used so care must be exercised in those systems having low alkalinity feedwater to start with. Specify "F" for FDA and USDA regulated facilities.
BT-7320	A special combination of DEHA & Hydroquinone volatile oxygen scavengers formulated as a hydrazine replacement. Much more effective as an oxygen scavenger and almost as strong a metal passivator. Choice for boiler layup.
BT-7350 BT-7351 BT-7352	Concentrated blends of sulfite and polymers originally designed for the treatment of Vapor Modulatic and coil type boilers. However, the product has become extremely popular for treatment of standard boiler systems operating with softened water on an "All Organic" basis where the sulfite is used to trace the polymer concentration. Typical control is to maintain 5-15 ppm SO <sub>3</sub> residual in the feedwater of a Vapor Modulatic. For standard boilers, the boiler water residual should be maintained in the 30-60 ppm range.
BT-7360 BT-7361 BT-7362	A modification of the BT-7350 series to include a neutralizing amine in the formulations. For many systems, product can be used as a one drum treatment where softened incoming makeup waters would provide sufficient alkalinity.
BT-7400	A combination of neutralizing and ethoxylated tertiary filming amines for maximum condensate corrosion control. Optimum product for extensive systems such as paper mills, refineries, petrochemical plants, etc. May <b><u>NOT</u></b> be used on FDA & USDA regulated plants.
BT-7410 BT-7420 BT-7430/BT-3430 BT-7440 BT-7450	The standard formulation (DEAE only) for general application in low pressure boiler systems. Also, the only USDA registered formulation. Probably acceptable in >80% of all facilities because of the intermediate distribution ratio of DEAE.

SKY ENTERPRISE, INC.  
BOILER WATER SYSTEMS  
PRODUCT AND APPLICATION SUMMARY

<u>Formula Number</u>	<u>Description</u>
BT-7410-A BT-7420-A BT-7430-A/3430A BT-7440-A BT-7450-A	Standard ratioed blends of neutralizing amines (9:1 Cyclohexylamine/ Morpholine) suitable for use in a wide range of industrial and commercial systems distributing most steam for longer runs while still having some steam used close to the boiler room. May be used in FDA regulated plants but cannot be USDA registered.
BT-7410-B BT-7420-B BT-7430-B BT-7440-B BT-7450-B	Special ratioed blends of neutralizing amines (9:1 Morpholine/ cyclohexylamine) for use in systems having a high percentage of steam consumed near the boiler room (usually steam hot water heaters or turbines) but still having remote steam consumers. May be used in FDA regulated plants but cannot be USDA registered.
BT-7410-C BT-7420-C BT-7430-C BT-7440-C	Cyclohexylamine solutions for plants having only extensive distribution systems. Also, the products to be used when live steam is used for humidification. May be used in FDA and USDA (when registered) facilities.
BT-7410-D BT-7420-D BT-7430-D BT-7440-D	Morpholine solutions primarily for application in high pressure utilities (1200 psi and lower) where steam is used only in turbines. May be used in both FDA and USDA facilities (when USDA registered). In the latter plants, it may be necessary to feed this material with one of the BT-7410 or BT-7410-C series product to assure proper distribution.
BT-7900 BT-7901 BT-7902	A series of high temperature boiler water antifoams for use in systems where foaming and/or priming might be a problem. Particularly useful where condensate contamination or high alkalinities make the boiler water unstable. <b><u>DO NOT OVERUSE.</u></b>
BT-7950 BT-7951 BT-7955	An extremely effective combination of organic acids and chelating agents designed for removal of iron from fouled ion exchange resins. The BT-7955 also contains a special surfactant which is useful in the removal of organics from both cation and anion units.

Application: The materials are primarily useful in sodium salt regenerated units where high incoming iron will gradually foul the resin causing loss of both capacity and efficiency. Complete application instructions are provided on a separate Technical Data Sheet.

SKY ENTERPRISE, INC.  
BOILER WATER SYSTEMS  
PRODUCT AND APPLICATION SUMMARY

<u>Formula Number</u>	<u>Description</u>
BT-7970/BT3970	<p>A specially blended combination of caustic, chelating agents, dispersants, surfactants and an embrittlement inhibitor for use in the cleaning (alkaline boil out) of new boilers or for boilers contaminated by oil.</p> <p><u>Application:</u> Complete use instructions are provided on a separate Technical Data Sheet.</p>
Conserve	<p>Dissolves built-up sludge in fuel oil storage tanks. It also emulsifies condensate moisture in storage tanks. Controls corrosion in storage tank lines, filters and burners.</p>
Resin Cleaner	<p>Resin cleaner is a revolutionary product that cleans the cationic water softener resin used for industrial applications. Fouling due to oil, grease, and rust can be a serious problem for softener resin, but Resin Cleaner easily removes both iron oxide rust, in addition to grease and oil. This concentrated cleaner may be added directly to the brine tank before adding salt.</p>

SKY ENTERPRISE, INC.  
 BOILER FUEL SYSTEMS  
PRODUCT AND APPLICATION SUMMARY

<u>Formula Number</u>	<u>Description</u>	<u>Treatment Requirements</u>
BT-7800	This series of Fuel Additives has strong water emulsifying, sludge solubilizing and stabilizing (antioxidant) properties designed for use in fuel storage tanks to minimize strainer and preheater fouling as well as carbonization on burner tips. The 7905 & 7906 versions also have toxic properties to kill microorganisms which can grow in the water phase or at the oil/water interface.	1-2 pints
BT-7801		1-2 quarts
BT-7802		2-4 quarts
BT-7805		1-2 pints
BT-7806		1-2 quarts

(per 1000 gals Fuel Delivered)

Application: The required dosages should be added to the storage tank just prior to a fuel delivery. This will assure thorough mixing of the additive with the fuel. When possible, tanks containing >2.0% water should be pumped to remove as much of the water as possible. Then the additive should be added at 2-3 times the regular dosage for the first couple of deliveries. **NOTE:** The initial dosage must take into account the fuel remaining in the tank. It is possible the cleaning frequency for strainers, preheaters, and burner nozzles might increase temporarily until tank conditions are brought under control.