



Olive & Branch Merchandizing
& Distribution LLC
9900 Spectrum Drive ♦ Austin, TX 78717
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Product Bulletin
Corrosion Inhibitor
CB-2 ChemBase®



CB-2 Provides multimetal protection in water systems. CB-2 blends easily with most common scale inhibitors. This multifunctional corrosion inhibitor is effective in all waters up to 110°C (230°F). CB-2 can be blended to a neutral pH product.

Benefits:

- Easy to blend
- No heavy metals
- Multimetal protection
- Yellow metal inhibitor
- Iron Sulfide dispersant
- Chlorine and bromine stable
- No caustic required to stay in solution
- Cost effective replacement for molybdate and azoles

NORMAL TREATMENT CONCENTRATIONS:

Open circulation systems need 5 to 10 ppm in the cooling water as product.
Hot closed water systems such as engine jackets need 20 to 25 ppm as product.

Use 25 to 35 ppm active in glycol antifreeze solutions (80 tp 100 ppm as product).

CB-2 is not a scale inhibitor. CB-2 enhances the effect of dispersants and most scale inhibitors.

SPECIFICATIONS

pH:	4.40 ± 0.05
FORM:	Liquid
ODOR:	Garlic
COLOR:	Clear
SP. GRAVITY:	1.132
POUNDS PER GALLON:	9.45

Handling: **CB-2** is considered non-polluting cooling tower water treatment. Safety goggles and rubber gloves are recommended. When handling this product accepted safety practices should be used. Consult the SDS before handling.

Storage: **CB-2** is stocked in our warehouse. Store in a cool dry place away from direct sunlight.

Shipping: **CB-2** is shipped under the NMFC classification of "Scale Preventing Compound, #50093, Sub 2, Class 55".



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Technical Data

CB-2 ChemBase®
Corrosion Inhibition
Replaces Molybdate & Azoles



ADDITIONAL PRODUCT INFORMATION

CB-2 ChemBase is a surface reactive corrosion inhibitor for most common metals. The protective film properties are of a metallic bond type that provide improved thermal conductivity and strong surface interface effects. The ion-dipole attraction of the inhibitor to a solid surface provides the nanometer thick film. The thin, single molecule thick film achieves maximum corrosion protection with a minimum amount of additive.

CB-2 is a result of extensive research to develop a more blender friendly multimetal corrosion inhibitor. The initial industrial application was for cooling waters in gas pipeline compressor engines. The product was later refined to protect open circulation cooling tower waters. A later enhancement improved corrosion protection on aluminum and copper based metals. CB-2 has been more recently altered to improve its ability to work in the presence of and penetrate iron sulfide deposits.

With over twenty years of exceptionally successful experience, CB-2 is a proven water based corrosion inhibitor for industrial cooling waters. CB-2 allows product blends at any pH with most scale inhibitors and dispersants.

CB-2 ChemBase is currently used in cooling waters, water based hydraulic fluids, glycol-water based coolants and hot waters.



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CB-2 Technical Data

Specific Replacement for Molybdate and Azoles

CB-2 is comprised of a formula that replaces all conventional copper, and copper alloy inhibitors that allows blending at almost any pH without pH adjustment. CB-2 is a multi-metal corrosion inhibitor that is effective in controlling corrosion of mild steel, copper and copper alloys, and aluminum. CB-2 does not contain azoles. Eliminates completely the use of azole corrosion inhibitors that require very acid or highly caustic solutions to dissolve.

All dosages are 50% active as product.

Environmental Conditions	Minimum Hardness	>50 ppm
	Maximum Hardness	4000 ppm known
	Maximum Temperature	98 °C
Recommended Treatment	<i>(Operate cooling water @ 6.5 to 11.5 pH)</i>	
Dosages	Blend as Corrosion Inhibitor	10.0 ppm
	Clean Systems	2.0 – 5.0 ppm (after passivation)
	Fouled Systems	20 – 35 ppm
	Iron Sulfide	35 – 45 ppm
Blending Guidelines	<ul style="list-style-type: none"> - Blend @ < 160 °F. - Add CB-2 last to most blends @ 35 to 122 °F. - CB-2 is compatible with most scale inhibitors. - Some synergism is realized with PBTC. - Add CB-2 and water to blend, before adding Halogens. - Blend at a pH of 3.0 to pH 12.0 and test for blend stability. 	
Test Factors	<ul style="list-style-type: none"> - Masters Phosphonate drop test - Hach Phosphonate Digestions Test <i>(extra digestion time may be required)</i>. - Ortho Phosphate tests. 	
Successful Service @ 2+ Years	Glass molding machines	200 to 205 °F
	Compressor engine jacket water	185.0 °F
	Natural gas processing plant	105.0 °F
	Refinery Cooling Water System	
	Cold Boiler Lay up	
	HVAC Systems	

CB-2 ChemBase Additives	Total Active Products	47.9%
	Total Solids	31.2%
	Total Phosphorous PO ₄	8.42% 0.5%
	Recommended Pretreatment	
	Carbon Steel	5 - 10 ppm
	Copper/brass	5.0 ppm
	Zinc	25 - 50 ppm
	Aluminum	10 - 15 ppm

Note: Not for use in Soft Water.

CB-2 Corrosion Rates

Parameters 1:

Water Hardness:	450 ppm as CaCO ₃	Total Alkalinity:	168 ppm as CaCO ₃
pH:	7.2	Temperature:	120 °F

Results:

Active ppm	0.0	0.5	1.0	2.0	5.0	10.0
Carbon Steel	7.180	1.020	0.180	0.022	0.016	0.010
Copper	0.100	0.020	0.011	0.008	0.004	0.005
Brass	0.110	0.024	0.011	0.009	0.004	0.003
Zinc	0.100	0.090	0.090	0.040	+	+

+ Represents weight gain with corrosion resistant coating.

Parameters 2:

Water Hardness:	850 ppm as CaCO ₃	Total Alkalinity:	
pH:	8.0	Temperature:	

Results:

Active ppm	0.0	1.0	2.5	5.0
Carbon Steel	6.21	0.14	0.02	0.01
Copper	0.11	0.01	0.01	0.01

Parameters 3:

Water Hardness:	850 ppm as CaCO ₃	Total Alkalinity:	
pH:	8.8	Temperature:	

Results:

Active ppm	0.0	1.0	2.5	5.0	10.0
Carbon Steel	7.10	0.11	0.01	0.01	0.01
Copper	0.12	0.01	0.01	0.01	0.01
Brass	0.12	0.01	0.01	0.01	0.01
Cast Iron	6.00	0.14	0.01	0.01	0.01