



CAFLON Si-HYBRID

Long life Antifreeze with
Organic Acid Technology and Silicates

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CHEMISTRY DELIVERED™

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CAFLON Si-HYBRID

- › Is an ethylene glycol based coolant concentrate formulated for use in all engines including those constructed from aluminium alloys.
- › Provides all year-round frost and corrosion protection. It is recommended to dilute the material 50vol. % in the final coolant solution. This provides frost protection to -38°C.
- › Contains an inhibitor package based on salts of Organic Acid's and silicates (Hybrid Coolant).
- › Is supplied **blue/green** in colour and contains a bittering agent.

Performance, Features & Benefits:

- › Offers outstanding protection against corrosion, overheating and frost.
- › Is a 'Long life' coolant due to the slow depletion rates of the OAT inhibitors versus traditional inorganic / mineral variants.
- › Adopts low silicate technology that boosts overall corrosion protection (in particular against aluminium).
- › Contains silicate stabilisers to prevent the formation of silicate gel often observed with inferior formulations / products.
- › The exceptional thermal stability eliminates the risks of deposits particularly near the cylinder head, engine block, radiator, water pump and heat exchanger.
- › Is NAP Free (Nitrite, Amine, Phosphate).
- › Has excellent hard water stability.
- › Exceeds the requirements of most European and International Standards;
 - BS 6580 (2010), ASTM D3306, SAE J1034

Typical Properties (Not a Specification)	CAFLON Si-HYBRID	ASTM D3306
Appearance @ 20°C	Clear blue/green liquid (*)	Not specified
Relative Density 15.5/15.5°C (60/60°F)	1.120	1.110 – 1.145
Freezing Point (°C) 50 vol % in DI water	-38.0	-36.4°C max
Boiling Point (°C) 50 vol % in DI water	109°C	108°C min
pH (neat)	7.3	Not specified
pH, 50 vol % in DI water	8.1	7.5 – 11.0
pH, 33 vol % in DI water	8.2	
Reserve Alkalinity @ pH 5.5	8.5	Report
Water (% w/w – Karl Fischer)	4	5 max
Flash Point (°C)	>120	
Foaming Properties (ASTM D1881) Vol. (ml)	40	150 max
Break (s)	1	5 max

(*) Can be supplied colourless also.

DILUTION

CAFLON Si-HYBRID must be diluted with water before use (ideally with DI water). It is hard water compatible and can be mixed with tap water (*) before filling into the cooling system.

(*) water quality should not exceed the following limits;

- › Water Hardness 0 - 20° dH (0 – 3.6mmol/l)
- › Chloride content 100 ppm max
- › Sulphate content 100 ppm max
- › CAFLON Si-HYBRID can also be supplied pre-diluted



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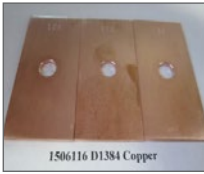
Caflon

CORROSION PROTECTION

Glassware corrosion test - ASTM D 1384

ASTM D 1384 ¹ Test Results					
ASTM D 1384	Specimen Corrosion Weight Loss (mg)				
Specimen	#1	#2	#3	Avg	Max**
Copper	1	1	1	1	10
Solder	1	0	0	0	30
Brass	2	1	1	1	10
Steel	0	1	1	1	10
Cast Iron	1	2	2	2	10
Cast Aluminium	-2	-2	-2	-2	30

** Maximum corrosion weight loss as specified by ASTM D3306



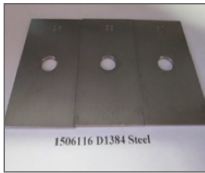
Copper



Solder



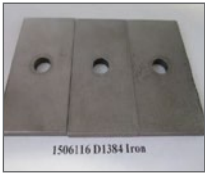
Brass



Steel



Cast Iron



Cast Aluminium



Corrosion of Aluminium under heat rejecting conditions - ASTM D 4340

ASTM D 4340 ¹ Test Results			
Run #1 Weight Loss (mg/cm ² /wk)	Run #2 Weight Loss (mg/cm ² /wk)	Average Weight Loss (mg/cm ² /wk)	ASTM Limit ** (mg/cm ² /wk)
-0.03	-0.02	-0.02	1.00
pH After (1)	pH After (2)	Appearance	
8.62	8.62	No Visible Deposit	





STORAGE

CAFLON Si-HYBRID has a shelf life of two years when stored in originally closed, air-tight containers at temperatures $\leq 30^{\circ}\text{C}$.

AVAILABILITY

20 & 25 LITRE KEGS



1000 LITRE IBC'S



205 LITRE DRUMS



BULK



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Mixing **CAFLON Si-HYBRID** with other coolants is not recommended.

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