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## Extended Life Antifreeze Coolant

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### 1. Description

SABAC Extended Life Antifreeze Coolant - mixed with the appropriate amount of water - is used as a cooling and heat transferring fluid in combustion engines. Excessive heat is transferred via the fluid to the radiator where the mixture is cooled by means of airflow.

The product is an ethylene glycol based fluid that provides maintenance-free protection against *freezing* and *boiling* but also against *corrosion*. Extender coolant life, often for the whole life of the engine or vehicle, is obtained through the use of virtually non-depleting corrosion inhibitors.

It is recommended to change the coolant every five years or at above mileages or operating times, whichever comes first. The product provides long-life protection against all forms of *corrosion* by the use of optimized and patented organic inhibitors. Excellent and lasting high temperature corrosion protection is provided for the **aluminium** heat transfer surfaces contained in modern engines. The inhibitor package offer excellent cavitation protection even without using nitrite or nitrite-based supplement coolant additives (SCA's).

### 2. Application

Extended Life Antifreeze Coolant may be used with confidence in engines manufactured from cast iron, aluminium or combinations of the two metals, and cooling systems made of aluminium or copper alloys. The product is particularly recommended for hi-tech engines, where high temperature aluminium protection is important.

### 3. Compatibility and Mixability

Extended Life Antifreeze Coolant is compatible with most other coolants based on ethylene glycol.

### 4. Approvals by OEM's

The product has been approved by many engine manufactures, both car and truck manufacturers. Some of these approvals are:

Ford	specification WSS-M97B44-D
Mercedes-Benz	specification 325.3
General Motors	specification GM 6277M
MAN	specification 324 type SNF
Volkswagen	specification TL 774F

A complete and up- to date list with all approvals is available separately.

#### **5. Storage and Requirements**

The product should be stored above -20°C and preferably at ambient temperatures. Periods of exposure to temperatures above 35°C should be minimized.

Further, it is strongly advised not to expose the coolant in translucent packages to direct sunlight because this can degrade the colour dyes present in the coolant, and result in fading of the colour dyes present in the coolant, and result in fading of the colour or discolouration over time. This reaction can be accelerated if coupled with high ambient temperatures. It is therefore advisable to store coolant filled in translucent packages indoors to avoid the issue.

The product can be stored for 8 years in unopened containers without any effect on the product quality or performance. It is strongly recommended to use new containers and not recycled ones.

As with any antifreeze coolant, the use of galvanized steel is not recommended for pipes or any other part of the storage/mixing installation.

## Technical information

		Extended Life Antifreeze Coolant	ASTM 3306 requirements Base	Method
<b>Chemical and Physical Properties</b>	Ethylene glycol	93% w/w glycol	5% w/w max	
	Other glycols	0.5% max	5% w/w max	
	Inhibitors content	5% w/w		
	Water content	5% max	5% w/w max	ASTM D1123
	Ash content	1.1% w/w typ.	5% w/w max	ASTM D1119
	Nitrite, amine, phosphate, borate, silicate	Nil		
	Colour	Orange		
	Specific gravity, 15°C	1.116 typ.	1.110 to 1.145	ASTM D5931
	Specific gravity, 20°C	1.113 typ.		ASTM D5931
	Equilibrium boiling point	180°C typ.	> 163°C	ASTM D1120
	Reserve alkalinity (pH 5.5)	6.2 typ.	Report	ASTM D1121
	pH, 20°C	8.6 typ.		ASTM D1287
	Refractive Index, 20°C	1.430 typ.		ASTM D1218

	50% dilution	40% dilution	33% dilution	ASTM 3306 7.5 to 11.0	Method ASTM D1287 ASTM D1881
pH	8.6	8.4	8.3		
Foaming properties at 25°C → break time	50ml typ. 5 sec. typ.	-	-		ASTM D1881
Foaming properties at 88°C → break time	50ml typ. 5 sec. typ.	-	50ml typ. 5 sec. typ.	150ml max.	ASTM D1881
Initial crystallization Freezing protection	< -37°C -40°C typ.	< -24°C -27°C typ.	< -18°C -20°C typ.	< -37°C	ASTM D1177
Specific gravity, 20°C	1.068 typ.	1.056 typ.	1.053 typ.		ASTM D5931
Reserve alkalinity (pH 5.5)	3.0 typ.	2.4 typ.	2.1 typ.		ASTM D1221
Refractive Index, 20°C	1.385 typ.	-	1.369 typ.		ASTM D1218
Equilibrium boiling point	108°C typ.	-	104°C typ.		ASTM D1220 GME60
Effect on non-metals Staining	no effect	no effect	no effect		255
Staining characteristics	-	no effect	no effect	no effect	ASTM D1882
Hard water stability	no precipitate	-	-		VW PV 1426