Technical brochure and Cost of treatment

"rb bertomeu” beco F-Plus
Concentrated

Complete treatment for all kind of fuel with <60 ppm Vanadium. For diesel engines of all sizes. For boilers, furnaces, dryers and gas turbines.

Dispersant of MCR-Conradson Micro Residues, demulsifier, stabilizer, detergent, algae and fungi remover, and Vanadium and Sodium corrosion inhibitor additive. Lubricant for Low Sulphur Diesel (LSD) injectors. It optimizes the combustion, reduces the fuel consumption and saves maintenance costs.

EFFECTS
Dispersant of carbons and asphaltenes which reduces sludge by 55% and the trigger rate at the water treatment plants. It keeps the filters clean. Desemulsifier, it decants the water and removes algae and fungi. Stabilizer that delays the fuel degradation. Detergent, it keeps injectors clean, improves combustion and reduces the emission of unburned particles by 80%. Soluble Magnesium molecules which inhibit corrosion. Improves lubricity for injection in Low Sulphur Diesel. Excellent results in the lubricity tests for Injection in Low Sulphur Diesel in accordance with ASTM D-6079 (HFRR) / ISO 12156.

The sum of all the effects provides a 3% fuel saving and, as a result, the CO₂, NOₓ and SOₓ emissions are also reduced at the same rate of 3%.

COMPOSITION

a) > 20% Soluble Magnesium carboxylate / Magnesium Organic salts of Fatty acids (molecules-trade secret) soluble in hydrocarbons. [see point a-1]
b) > 50% Dispersants, surfactants, stabilizers, detergents, corrosion inhibitors, demulsifiers, and biocides. [see points b-1 to b-7]
c) < 30% Organic solvents. [see point c-1]
d) Density: 0.900 Kg/L

a-1) Soluble Magnesium carboxylate / Magnesium Organic salts of Fatty acids (molecules-trade secret) soluble in hydrocarbons.

Active surface / Surface area of 1 gram of Magnesium molecules: ≈ 1,800 m²/g

b-1) Dispersants, which cause the uniform separation of particles of asphalts, coals and other solids which the fuel oil contains, minimizing sludge formation.
b-2) Surfactants, which reduce the surface tension of the fuel and achieve better pulverization.
b-3) Demulsifiers, which accelerate the speed of separation of the water, to the bottom of the storage tank, for ease of removal.
b-4) Biocides, which help maintaining the integrity of fuels, preventing the bacterial and fungal contamination in the storage tanks.
b-5) Stabilizers, which detain the ageing and normal degradation of the fuel, and avoid the increase in sediments by increasing the size of the small particles in suspension.
b-6) Detergents, which reduce the formation of coal deposits and flow loss in the injectors, and maintain an excellent pulverization.
b-7) Corrosion inhibitors, which protect the metal parts of the fuel circuits.
c-1) Organic solvents with flash point > 65 °C. (C.C.)
"rb bertomeu” beco F-Plus
Concentrated

DOSAGE TABLES
For Low-Sulphur Diesel: <50 ppm ~ 0,005% m/m
Recommended dose (in volume): 0,0060% = 0,060 liters ~ 60 ml / 1000 liters of fuel

For Marine Diesel Oil DMA, Gas Oil C: sulphur < 1000 ppm ~ 0,1% m/m
Recommended dose (in volume): 0,0074% = 0,074 liters ~ 74 ml / 1000 liters of fuel

<table>
<thead>
<tr>
<th>MCR %</th>
<th>Vanadium ppm</th>
<th>Kg / MT of fuel</th>
<th>Additive:fuel ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 12%</td>
<td>&lt; 12%&lt;14%</td>
<td>0.15</td>
<td>1:6666</td>
</tr>
<tr>
<td>12%&lt;14%</td>
<td>14%16%</td>
<td>0.21</td>
<td>1:4762</td>
</tr>
<tr>
<td>14%16%</td>
<td>17%</td>
<td>0.29</td>
<td>1:3448</td>
</tr>
<tr>
<td>17%</td>
<td>18%</td>
<td>0.37</td>
<td>1:2703</td>
</tr>
<tr>
<td>18%</td>
<td>19%</td>
<td>0.46</td>
<td>1:2174</td>
</tr>
<tr>
<td>19%</td>
<td>20%</td>
<td>0.56</td>
<td>1:1786</td>
</tr>
<tr>
<td>20%</td>
<td>21%</td>
<td>0.67</td>
<td>1:1493</td>
</tr>
<tr>
<td>21%</td>
<td></td>
<td>0.79</td>
<td>1:1266</td>
</tr>
</tbody>
</table>

For higher Vanadium content, complement with the “rb bertomeu” beco Mg Concentrated additive.

COST OF TREATMENT ACCORDING TO THE FUEL AND THE SUPPLIED QUANTITY OF ADDITIVE

| Cost of treatment for low-sulphur Diesel (Suggested dose 0.060 L / 1000 L of fuel) |
|---------------------------------|-----|-----|-----|
| beco F-Plus Concentrated additive. 1 liter | 23 €/L 19 €/L 9.93 €/L 9.43 €/L |
| Package                         | 5 L  25 L  4 drums x 200 L IBC x 1000 L |
| Cost of treatment for 1000 L of fuel | 1.38 €/1000 L 1.14 €/1000 L 0.60 €/1000 L 0.57 €/1000 L |

Cost of treatment for marine Diesel DMA, Gas oil C (Suggested dose 0.074 L / 1000 L of fuel)

| beco F-Plus Concentrated additive. 1 liter | 23 €/L 19 €/L 9.93 €/L 9.43 €/L |
| Package                         | 5 L  25 L  4 drums x 200 L IBC x 1000 L |
| Cost of treatment for 1000 L of fuel | 1.7020 €/1000 L 1.4060 €/1000 L 0.7348 €/1000 L 0.6978 €/1000 L |

Cost of treatment for Fuel oil or Crude oil with MCR < 12% (Suggested dose 0.15 Kg / MT of fuel)

| beco F-Plus Concentrated additive. 1Kg | 25.68 €/Kg 21.11 €/Kg 11.03 €/Kg 10.48 €/Kg |
| Package                         | 5 L  25 L  4 drums x 200 L IBC x 1000 L |
| Cost of treatment for 1 MT of fuel | 3.8520 €/MT 3.1665 €/MT 1.6545 €/MT 1.5720 €/MT |

Prices and conditions:

- Tax base
- Freight paid to destination in mainland Spain and the Balearic Islands
- Export: Incoterms 2020 FCA Air and Sea FOB, from Barcelona
- Export: Express shipment by air 1-2 weeks to any worldwide destination
- Prices valid until December 30, 2020
- NC–TARIC code: 3811 90 00

If you have any technical or commercial question, please fill-in and send this form.

DOSSAGE / ADDITION POINT: The injection must take place in the inlet pipe to the storage tank.


ENVIRONMENT AND TRANSPORTATION: Liquid product hazardous for the environment. Cataloged for transportation ADR/RID, ADN, IMDG and IATA: Class 9, P.G. III, UN 3082

MANUFACTURER AND COUNTRY OF ORIGIN: Manufactured by “rb bertomeu” in Spain (European Union).

rb bertomeu S.L. – Since 1995, Heavy fuel oil, Gas oil and Crude oil additives manufacturer
Pol. Ind. Fondo de Llitera, c/Ramaders, Parc. 82-83. E-22520 Fraga (Huesca) SPAIN
Phone: (+34) 974 47 48 04 – (+34) 630 43 08 43
www.rbbertomeu.com
rbbertomeu@rbbertomeu.com