

ECOPHOR B/609

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1. IDENTIFICATION

Product name: ECOPHOR B/609
Kind of Product: pre-treatment system (organic phosphating) of metal to paint
Product code: PPRECB609

2. MAIN FEATURES, PROPERTIES AND USE

ECOPHOR B/609 is a one step system for cleaning, degreasing and phosphating of metal surface before painting, working at room temperature, without any rinsing, heating and waste water treatment or mud to dispose.

ECOPHOR B/609 is a pre-treatment system made by a polymer which contains phosphating groups dissolved in a particular organic solvent mixture.

The action made by the product can be resumed as follow:

- 1) cleaning and degreasing: the oily contaminants are chemically removed from the surface
- 2) the phosphoric acid reacts with the metal surface: creation of the first chemical bridge
- 3) during the solvents evaporation: crosslinking of a special organic-inorganic polymer (1-2 microns) that includes into itself part of the oily contaminants and that coats all the surface treated.

The polymeric film created by ECOPHOR B/609 process guarantees a valid temporary protection against flash rust and corrosion allowing the storage of not painted pieces for a period of four-five months in a ware house or for few days out side.

ECOPHOR B/609 works at room temperature, in one step, without rinsing and in a very easy way, in cheap and compact plant. Additional energetic costs of traditional multi steps pre-treatment plant are erased. The System works by dip or by flow-coat spray without creation of mist. In the drying step an oven is required in order to allow the evaporation of the organic fluids.

ECOPHOR B/609 as it holds inside the polymeric film part of oily contaminants, does not create solid waste to dispose, typical problem of traditional water based degreasing and phosphating plant. So, if the plant is correctly used, only addition of material due to the consumptions are required and the life of the chemicals is quite unlimited.

ECOPHOR B/609 is not classified as combustible (Flash Point > 100°C) and, according to the EEC Normative 1999/13 dated March 11th, 1999, enclosed II part 5, it is exempt from the VOC emission rules because it does not contain any compound classified as VOC material.

ECOPHOR B/609 can be used for treating iron, cast iron, galvanized, stainless steel, aluminium and its alloys, while on metal surface like zamak, and aluminium with high silicium quantities, compatibility problems may arise. Preliminary tests must be always carried out.

ECOPHOR B/609 is compatible with all painting products (exception made for e-coat), one or two components, water or solvent based and with powder coating. See List of compatibility of different paints with ECOPHOR SYSTEM. Anyway, according to the large amount of different kind of paints present in the market, trials and preliminary tests are always recommended.

3. PHYSICAL CHEMICAL CHARACTERISTICS

Physical state: liquid
Aspect: Yellowish transparent
Odour: Typical
Viscosity: 45 - 55" C.F: 2 at 20° C

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3. PHYSICAL CHEMICAL CHARACTERISTICS (contiuunue)

- Specific weight:** 0.945 ± 0.050 kg/l at 20° C
- Vapours specific weight:** > 1 (air = 1)
- pH:** 3 – 4.5
- Flash point:** 100° C (method ASTM D 93/A)
- Solubility in water:** polymer insoluble, volatile substances contained limitedly soluble
- Stability:** stable under normal storage and use condition.
- Storage:** Keep at temperatures between 5 and 40°C in its original packing perfectly sealed, far from heat sources, free flame, sparks

4. APPLICATION DATA

- Product -preparation:** the Product is supplied as ready to use.
It could be necessary to use FLUID B/609 together with fresh ECOPHOR B/609 for topping up the level for replacing the product used (generally in 1:1 ratio)
- Application way:** static or in-line dip plant; flow coating spray plant (0.2-0-3 bar, max 0.5)
- Running temperature:** room temperature
- Running time:** treatment time: 60 - 120 seconds according to the shape of the pieces and to the kind and quantity of oily contaminants.
draining time: 4 - 6 minutes
drying time: 5 - 10 minutes at 150-160°C.
These are general data: the dripping off and the drying time in the oven can change according to the shape of the pieces and to the temperature.
- General yield :** 20 - 30 mq/l. The output can change according to the shape off the pieces.
- Warning:** put the pieces in order to avoid the presence of accumulation area before drying and lost of Product (drag out) or over thickness that can bring problems in painting.
- Analithycal control:** the System does not require analytical control made by operators. Our laboratory makes instrumental checks every three months or upon requests in order to control the oily quantity, and the condition of the Product, indicating the way of re-filling and the actions suggested.

5. PLANT INSTRUCTIONS

It is very important to spray the product with the lowest possible pressure: 0.2 – 0.3 are the recommended value, 0.5 is the maximum.

In spray installation the atomization of the product sprayed must always avoided.

The specific features of the plant can change every time according to the customer's requests.

Following we supply some indication that are necessary for a right plant working.

- MATERIALS

The tank and all the parts that are in contact with the Product must be made of Stain less steel AISI 304.

- TANK

For dip plant the tank containing the Product must be provided with a free board very high of at least 80 - 100 cm. This in order to avoid that the solvent vapours, heavier than air, disperse in the working area, creating danger and increase of smell and lost of Product.

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5. PLANT INSTRUCTIONS (continue)

- ASPIRATION

The plant must be provided with suitable aspiration in order to avoid disperse of vapours in the working area.

- FILTER GROUP

It is recommended to install a filter group with a pump. The filter group contains as bag of woven - not woven in polypropylene that keep the solid impurities which were on the pieces and let the solution in the tank clean.

In the dip tank, the mechanical action of Product on the pieces due to the movement of the solution guarantees a better cleaning action.

The hydraulic connection between the filter group and the tank are generally made as follows: aspiration of the liquid at the bottom of the tank on the entrance side; the filtered liquid comes back into the tank under the free board counter-current to the way of conveyor of the air.

The filter group must be in a accessible area and not in a hole or where ever there could be accumulation of vapours' Product.

The filter group is supplied by PAI-KOR at very competitive price. Anyway, PAI-KOR can supply the drawing of the filter group for who decides to built it by himself.

- DOUBLE TANK

It is suggested to put a double extractive tank, in order to allow the recovery of the fallen pieces and the cleaning of the tank.

- CONTAING TANK

As note the present provision impose the presence of a back-tank suitable to contain the liquid eventually poured.

- DRAINIG

In order to reduce the Product consumption it suggest to let the Product recovered during the draining time fall into the tank.

- TREATMENT SECTION

In order to reduce the consumption and the avoid loss of Product in the working area, it is recommended to put one door between the different part of the plant (entrance-treatment-blow off and draining, drying) with closing time or flexible door or suitable aspiration system that let the Product not disperse in the working area.

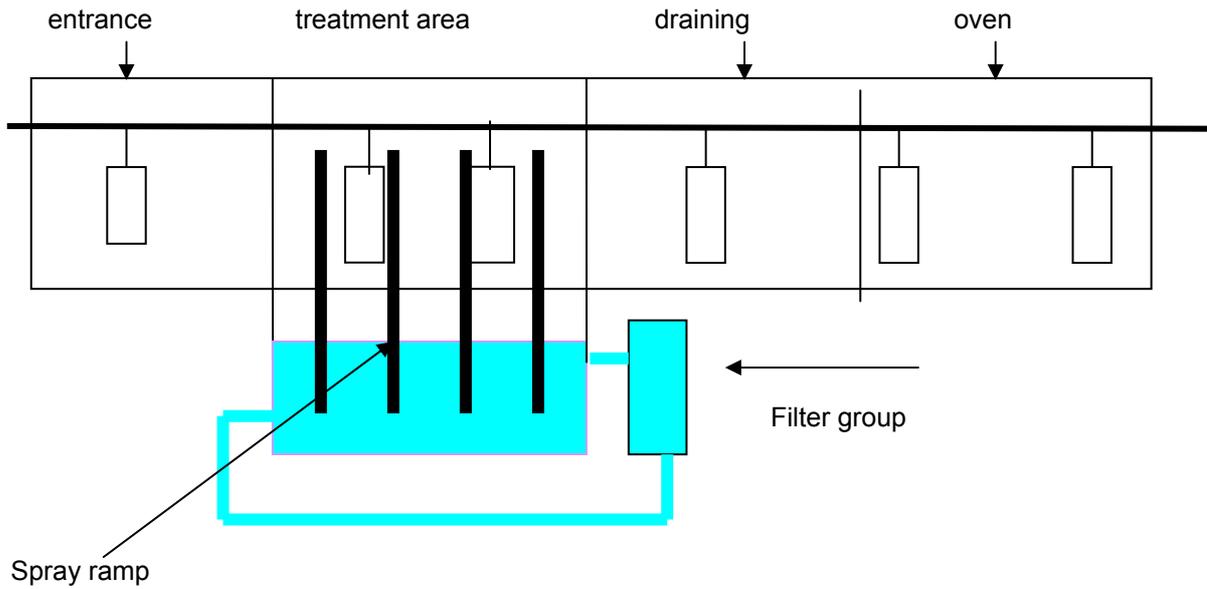
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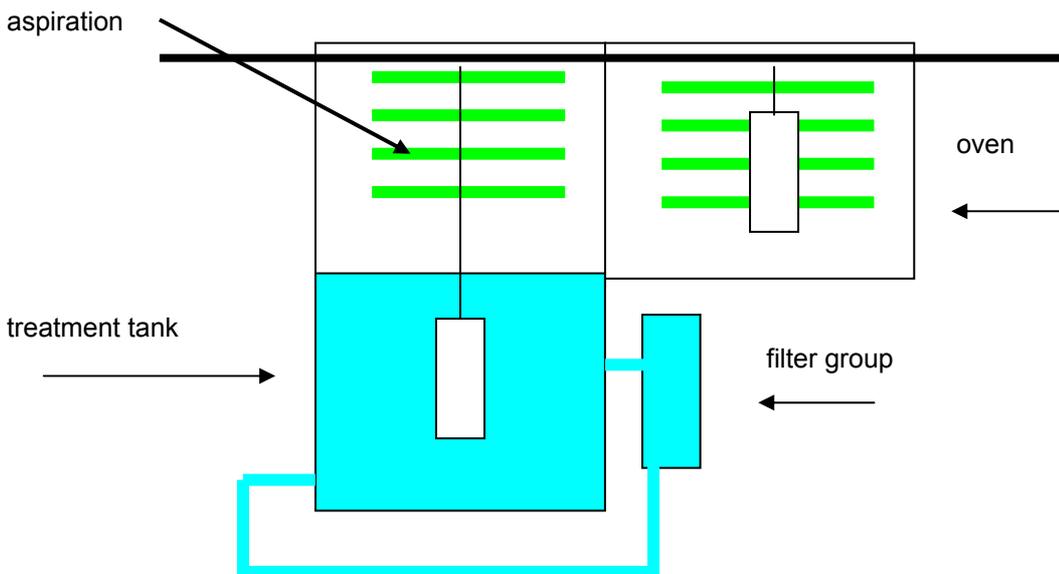
5. PLANT INSTRUCTIONS (continue)

Following we give scheme of dip static plant and in line spray plant

SCHEME OF SPRAY PLANT



SCHEME OF STATIC DIP PLANT



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5. PLANT INSTRUCTIONS (continue)

ECOJET MODULE

For discontinuous production in short area, we suggest to use the ECOJET MODULE a static very compact plant, with a very limited cost, that can be developed for manual-translation or fully automatic plant, with mobile spray ramp, for spray of the chemicals and draining in the same section. See specific documents for further information.

6. WARNING AND LIMITS

Pickling: ECOPHOR products can not remove rust. Therefore they can not be used as pickling product or to treat parts with heavy rust (which must be chemically or mechanically removed before ECOPHOR). However, light rust spot can be accepted. Preliminary test must be always carried out.

Oily contaminants limit: if the quantity of oil present on the metal surface to be treated is higher than 1.5 gr/m² the risk is that the oil becomes saturated by the oil, losing its degreasing capacity. In this case it is recommended a preliminary degreasing system. It is reminded that the 1.5 gr of oil per m² is by far higher than quantity of oil present on normal cold rolled steel.

Compatibility with oil and other substances: ECOPHOR can not remove substances like silicones, stearates, paraffins, palmitates, wax or grease with high melting point. It is recommended not to use ECOPHOR for treating surface with this kind of contaminants or to do a preliminary mechanical or chemical preparation of the surface. Specific preliminary tests must be always carried out. Of course any contact between water and ECOPHOR must be avoided.

7. ENVIRONMENTAL IMPACT

WATER

Water is not used in the system and so there are not any water pollution.

GROUND / SLUDGE

There are not any creation of reaction's sludge; no solid waste to dump, except for the impurities present on the surfaces treated

ATMOSPHERE

ECOPHOR B/609 does not contain solvent or any teratogenic, cancer creating or mutagenic substances, chlorinated solvents, CFC (Chlorine-Fluorine-Carbons), substances with depressive power for stratospheric ozone

87. PACKING

ECOPHOR B/609 is supplied in polyethylene high density 50 or 200 lt barrels.

The information correspond to our current knowledge on the subject. It is offered solely to provide possible suggestions for your own experimentations. It is not, however, intended to substitute for any testing you may need to conduct to determine for yourself the suitability of products for your particular purpose. These information may be subject to revision as new knowledge/experience becomes available. Since we cannot anticipate all variations in actual end-use conditions, we makes no warranties and assumes no liability in connection with any use of this information. Our Technical Service should be contacted to learn more about product application opportunities.
