

## LIST OF HYDROPHOBIC FLOATING SORBENT TO BE USED AT SEA AND IN INLAND WATERS TESTED BY CEDRE

### SORBENT TYPE A (BULK, "SPAGHETTIS")

The table below gives a non-exhaustive list of sorbent products tested according the **NFT 90-360** norm by Cedre's laboratory measured using crude Arabian Light, topped at 110°C (viscosity 42-45 cP at 20°C) for their efficiency and specifies:

- the sorbent capacity which allows a comparison of the products performances.
- the nature of the sorbent material, which is an essential element to define the storage conditions and the disposal of the product (eg: incineration).

Only products which meet to the following criteria are listed below:

1. sorbent capacity: sorbent capacity in weight higher than 5 or sorbent capacity in volume higher than 0,5 (calculated according to the apparent density of the product)
2. hydrophobia: retention capacity of water/retention capacity of oil equal or below 0,25
3. stability: the product must stay stable and un-friable for keep its properties

Name of the product	Nature of the material	Aspect	Characteristic of the sorbent	Absorbent capacity by weight	Supplier
<b>Bioblue natural absorber</b>	biopolymer	beige Flake	bulk	19,8	Biosolvit Ltda
<b>Dipsorb T</b>	polyurethane	granulate	bulk	19,0	Saitec SA
<b>Granosorb_H</b>	vegetal (wood)	light brown granulate	bulk	4,7	SAS Jacky Courtigne
<b>Microsorb</b>	polypropylene	white flake	bulk	13,7	Schoeller Industries S.A.S
<b>Oilkontrol</b>	collagen	light grey flake	bulk	5,6	Technokontrol
<b>Repsorb Spaghetti</b>	polypropylene	white fiber	« spaghetti »	9,0	REP

#### NOTE ABOUT THE USE OF DATA OF TABLE

The sorbent capacity in weight in the table, is the retention capacity when the sorbent is saturated, with oil (crude Arabian Light, topped at 110° C). For each product, it is possible to determine the theoretical price per treated liter, by combining the retention capacity in weight (sorbent capacity) with the price of the sorbent.

The price per treated liter of oil is a good criterion to compare the efficiency of various sorbents from an economic point of view.

Beyond this criterion, for obvious operational reasons, it is important to evaluate the sorbent capacity in volume, which is the volume of sorbent needed to recover a given volume of pollutant. This can be calculated by taking into account the apparent density of the product in its packaging, available from the supplier, and the sorbent capacity in weight.

Some manufacturers might modify the composition or the nature of the sorbent they market; in case of doubt, do not hesitate to consult Cedre which keeps a sample of each product that is tested ; this will allow, at least, a visual comparison to be made.

Additionally it is always possible to order a control test of the product.

This procedure of approval is carried out without prejudice to the procedures prescribed under the French law n°77-771 of 12 July 1977, as amended by French Law n°82-905 of 21 October 1982 relating to the control of chemicals and its implementary provision.

If the data provided by Cedre, valid for a three year period, is not updated by the manufacturer or retailer, Cedre cannot guarantee that the product is still available for purchase or that is still presents the same characteristics as the sample tested.

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### TYPES B & C (SHEETS, ROLLS or MAT)

The table below gives a non-exhaustive list of sorbent products tested according the **NFT 90-360** norm by Cedre's laboratory measured using crude Arabian Light, topped at 110°C (viscosity 42-45 cP at 20°C) for their efficiency and specifics:

- the sorbent capacity which allows a comparison of the products performances.
- the nature of the sorbent material, which is an essential element to define the storage conditions and the disposal of the product (eg: incineration).

Only products which meet to the following criteria are listed below:

1. **sorbent capacity:** sorbent capacity in weight higher than 5
2. **hydrophobia:** retention capacity of water/retention capacity of oil equal or below 0,25
3. **stability:** the product must be sufficiently strong to be manipulated as it is without tearing

Name of the product	Nature of the material	Aspect	Characteristic of the sorbent	Absorbent capacity by weight	Supplier
<b>AquaPal Green 2</b>	polyolefin mixture	green Foam	sheet	25,1	Palziv
<b>ENV200-M</b>	polypropylene	white	sheet	12,9	SPC, a Brady business
<b>Foam Flex 200</b>	open cell polyurethane	white	sheet	14,6	Test 1 SRL
<b>HY4050X L</b>	polypropylene	white	sheet	16,7	Eurosorb
<b>OP100-E</b>	polypropylene	white	sheet	13,0	SPC, a Brady business
<b>Maresorb Pad</b>	polypropylene	white	pre-cut and honeycombed sorbent	9,6	Mare Sea Cleaning Services INC
<b>Maresorb Pad 2</b>	polypropylene	white	sheet	11,9	Mare Sea Cleaning Services INC
<b>Maresorb 350g/m<sup>2</sup> Pad</b>	polypropylene	white	sheet	11,0	Mare Sea Cleaning Services INC
<b>3M HP 156</b>	polypropylene	white	sheet	16,5	3M
<b>Repsorb Feuille HC</b>	polypropylene	white	sheet	12,8	REP

#### NOTE ABOUT THE USE OF DATA OF TABLE

The sorbent ability in weight in the table, is the retention capacity when the sorbent has reached on point, measured using crude Arabian Light, topped at 110° C. For each product: It is possible to determine the theoretical price per treated liter, by combining the retention capacity in weight (sorbent ability) with the price of the sorbent. The price per treated liter of oil is the only criterion by which the efficiency of the various sorbents can be compared from an economic point of view.

Some manufacturers may modify the composition or the nature of the sorbent they market; in case of doubt, do not hesitate to consult Cedre which keeps a sample of each product that is tested; this will allow, at least, a visual comparison to be made. Additionally it is always possible to request a product test from Cedre.

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### TYPES D & E (PILLOWS or SOCKS and BOOMS) And TYPES G (SPECIAL PRODUCTS)

The table below gives a non-exhaustive list of sorbent products tested according the **NFT 90-360** norm by Cedre's laboratory measured using crude Arabian Light, topped at 110°C (viscosity 42-45 cP at 20°C) for their efficiency and specifies:

- the sorbent capacity which allows a comparison of the products performances.
- the nature of the sorbent material, which is an essential element to define the storage conditions and the disposal of the product (eg: incineration).

Only products which meet to the following criteria are listed below:

1. **sorbent capacity:** sorbent capacity in weight higher than 10
2. **hydrophobia:** retention capacity of water/retention capacity of oil equal or below 0,25
3. **stability:** the product must stay stable and un-friable for keep its properties

Name of the product	Nature of the material	Aspect	Characteristic of the sorbent	Absorbent capacity by weight	Supplier
<b>Types D &amp; E - Pillows, socks and booms</b>					
<b>GO-1</b>	mineral (Silicate)	grey fiber	boom	26,7	Green ocean B.V
<b>HY810</b>	polypropylene	white	boom	21,1	Euroorb
<b>Maresorb Boom</b>	polypropylene	white	boom	14,7	Mare Sea Cleaning Services INC
<b>Microorb barrage</b>	polypropylene	white	boom	23,0	Schoeller Industries S.A.S
<b>Type G - Special product</b>					
<b>Blocks – Rigid plate</b>					

#### NOTE ABOUT THE USE OF DATA OF TABLE

The sorbent ability in weight in the table is the retention capacity when the sorbent has reached on point, measured using crude Arabian Light, topped at 110° C. For each product: It is possible to determine the theoretical price per treated liter, by combining the retention capacity in weight (sorbent ability) with the price of the sorbent. The price per treated liter of oil is the only criterion by which the efficiency of the various sorbents can be compared from an economic point of view.

In the case of a boom, the results of tests apply to the constituent material of the boom and not to the boom itself; the performances of booms may vary slightly according to the state of compression of the material within the boom.

Some manufacturers may modify the composition or the nature of the sorbent they market; in case of doubt, do not hesitate to consult Cedre which keeps a sample of each product that is tested; this will allow, at least, a visual comparison to be made. Additionally it is always possible to request a product test from Cedre.

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