Petroleum Sorbents Reference Guide

Use

For control of spills of hydrocarbons on water or land. 3M™ Oil Sorbents repel water and float. They are often used to contain and absorb hydrocarbons that are on the surface or in an emulsion in the water.

Product Description

3M™ Oil Sorbents are made from inert, synthetic fibers principally polypropylene for 'T Series' oil sorbents and polypropylene and polyester for 'HP Series'. They are available in a wide range of formats and are lightweight and dust-free. They have a high absorption capacity which minimizes the amount of waste for disposal. HP Series antistatic products have a charge dissipating polypropylene scrim and are packaged in charge dissipating film.

Color

White (sheets and rolls) and red/orange (booms and pillows).

Selection Guide

- **Pads/Sheets:** A highly adaptable format. They can be used on water to pick up oil covering large surface areas and in wiping applications.
- **Multiformat:** Combines four formats in one product. It can be used as booms, pillows, sheets or rolls.
- **Drum Covers:** For use with 55 gallon drums to catch spills and drips.
- **Rolls:** For fast coverage of large surface areas, they can be easily torn to length. Also used as a mat to keep shorelines or banks clean and to place used sorbents upon.
- **Antistatic Products:** The HP Series antistatic products are designed for use in low temperatures and low humidity where static sparking needs to be avoided.
- **Minibooms:** Generally on-land applications to contain and absorb spills.
- **Pillows:** Used for bulk absorption of oil on land or water. Particularly useful in drains to act as interceptors.
- **Booms:** May be connected together to form barriers. These are anchored at each end and positioned across still/moving water to contain, channel and absorb oil spills. Suitable for use on rivers and in harbors.
- **Sweep:** Used to pull over still water to remove surface films.
- **Particulate:** Loose sorbent suited to absorption of oil spills on land or still water.
- **Spill Response Kits:** The modern effective way to control and clean up spills.

Physical Data

Product No.	Size	Case Sorbency (Gallons)	Billing Unit	Quantity Per B.U.
Pads/Sheets				
HP-156	17 in x 19 in	37.5	CASE	100 pads
HP-157	34 in x 38 in	75	CASE	50 pads
HP-255	17 in x 19 in	33	EACH	50 pads
T-151	17 in x 19 in	43.5	EACH	200 pads
T-156	17 in x 19 in	40.5	EACH	100 pads
T-157	34 in x 38 in	81	EACH	50 pads
HP-556	17 in x 19 in	37.5	CASE	100 pads
HP-557	34 in x 38 in	75	CASE	50 pads
Multiformat				
P-FL550DD	5 in x 50 ft	31.5	CASE	3 cartons
Drum Covers				
P-DC22DD	22 in	18	CASE	25 covers
Rolls				
HP-100	38 in x 144 ft	73	EACH	1 roll
T-100	38 in x 144 ft	84	EACH	1 roll
T-190	19 in x 144 ft	42	EACH	1 roll
HP-500	38 in x 144 ft	73	EACH	1 roll
Minibooms				
T-4	3 in x 4 ft	12	CASE	12 booms
T-8	3 in x 8 ft	12	CASE	6 booms
T-12	3 in x 12 ft	12	CASE	4 booms
Pillows				
T-30	7 in x 15 in	8	CASE	16 pillows
T-240	5 in x 14 in x 25 in	35	EACH	10 pillows
Booms				
T-270	8 in diameter x 10 ft	80	EACH	4 booms
T-280	(4 in + 4 in) x 10 ft	80	EACH	4 booms
Sweeps				
T-126	21 in x 100 ft	25	EACH	1 sweep
Particulate				
T-210	25 pounds	35	BAG	1 bag
Spill Response Kits				
P-SKFL5	3 Petrolls; one poly bag.	15	CASE	3 kits
P-SKFL31	2 Petroleum Sorbent Folded Rolls, 30 pads, 3 poly bags, 1 20-gallon plastic drum w/lid and closure ring.	31	EACH	1 kit
SRP-PETRO	3 Petroleum Sorbent mini-booms, 5 Chemical Sorbent pads, one poly bag.	12	CASE	3 packs

Absorption/Sorbency

The case sorbency quoted in the table is based on the American Standard Test Method (ASTM) F726-81 using a medium viscosity fluid (20 weight motor oil). Another method of measuring absorbent performance is by calculating the sorbency ratio. This is the ratio of liquid weight absorbed to the dry absorbent weight.

$$\text{Sorbency} = \frac{\text{wet weight - dry weight}}{\text{dry weight}}$$

The sorbency ratio and speed of absorption depend upon the ambient temperature, the polarity of the liquid, its surface tension and viscosity. For 3M™ 'T series' Oil Sorbents the sorbency ratio is 10-15 and for the 'HP series' 15–20 for most of the common hydrocarbons.

Typical Liquids Absorbed

3M™ Oil Sorbents are suitable for absorbing hydrocarbons and non-polar organic solvents, eg; oil, paraffin, diesel, benzene, alcohols, toluene, trichloroethane, esters and ethers.

Limitations of Use

Do not use on aqueous liquids or aggressive liquids: strong acids, caustic oxidizers or reactive chemicals. In particular there is a risk of degradation with the following: Oleum, Chlorosulphonic acid, Liquid bromine, Fuming nitric acid, Chromic acid, Sulphuric acid and Hydrogen peroxide. 3M recommends that a compatibility test be carried out prior to using the absorbent with the liquid concerned. For use in temperatures over 60°C it is essential that such a compatibility test is made prior to use.

Precautions

3M™ Oil Sorbents are not in themselves hazardous products, however, they take on the characteristics of the liquids they absorb. Adequate precautions should be taken when handling or storing hazardous/inflammable materials and appropriate personal protective equipment should be worn. Users should be informed of the risks incurred in use, storage and disposal of used sorbents.

Disposal

Dispose of used sorbents only in accordance with local and national regulations. Disposal companies should be consulted for their recommendations.

Waste Minimization

3M recommends that waste streams should wherever possible be minimized. Sorbents by 3M promote minimization by only being a small part of the total waste. In addition, where laws allow, 3M™ Oil Sorbents can be disposed of by incineration yielding less than 0.02% ash (ASTM D-482). The high energy value of the sorbents (46,000 KJ/Kg) is also favorable for incineration and waste-to-fuel systems. Furthermore, sorbents by 3M may be wrung out and reused (90% recovery using mechanical wringing according to ASTM F726-81). The recovered liquid may itself then be reused or disposed of.

Flammability

3M™ Sorbents have been tested by an independent test house for flammability characteristics. Tests were carried out on long-term storage, heat build-up and ignition from three sources: spark, flame and cigarette using oil and diesel at 0%, 50% and 100% saturation levels. Tests were compared to testing on clay granules and sawdust. The results which are available in a full report can be summarized: 3M™ Sorbents take on the properties of the liquid absorbed and do not present a greatly increased flammability hazard over other common absorbents. No heat build-up occurs in long-term storage.

3M

Building and Commercial Services Division
3M Center
St. Paul, MN 55144-1000
(800) 852-9722
www.3m.com/occsafety