safety@work

Your DENIOS Safety Update

Dear Reader,

Are you fully prepared for an oil or chemical incident? Can you safely prevent the pollution of the environment due to escaping water-polluting liquids? How do you deal with dripping machinery to prevent a work safety hazard?

In this issue of "safety@work", your new safety update from DENIOS, we give you loads of information on absorbent materials. Find out, for example, what advantages DENSORB absorbent materials have compared to traditional granules and how you can best prepare for an emergency.

We hope you enjoy reading the magazine!

Your DENIOS Team

DENIOS
ENVIRONMENTAL PROTECTION & WORK SAFETY

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TF10 7DW Newport-Shropshire

JUST 3 STEPS TO FINDING THE OPTIMUM PRODUCT

Suitable in everyday use for dripping machinery or for emergency leak situations, absorbent materials help you avoid incalculable risks and their associated costs. DENSORB absorbent materials are available for a wide range of applications and in many practical designs. We've put together below the most important information and advice to help you quickly find the right product for your application.

1. Which liquids need to be absorbed?

The right absorbent material for your application needs to be selected first of all based on the liquid which needs to be absorbed. There are 3 versions of DENSORB absorbent materials available.

DENSORB UNIVERSAL

Features:
Hydrophilic, absorbs almost all liquids

Suitable for:
Oils, coolants, lubricants, antifreeze, oil-water emulsions and other aqueous liquids as well as non-aggressive acids and alkalis

DENSORB OIL

Features:
Hydrophobic, absorbs hydrocarbon-based liquids, water-repellent

Suitable for:
Oils, petrol, diesel, solvents and petroleum

DENSORB SPECIAL

Features:
Hydrophilic, chemically inert, absorbs almost all liquids, including aggressive chemicals

Suitable for:
Acids, alkalis and aggressive media

Absorbent rolls Economy PLUS

Universal, Light version

Absorbent mat in abrasion resistant material for high-performance use in work areas prone to leaks.

External dimensions W x L [cm]	38 x 4500
Pack contents	1 roll
Absorption capacity: [litres/pack]	60
Order No.	**248-907-9D**
Price / Pack	**£ 68.50**
Price / Pack from 3 packs	**£ 65.00**

Absorbent rolls Economy PLUS

Oil, Heavy version

This high-performance absorbent mat with heavy-duty, lint-free protective layers on both sides can be walked or driven over.

External dimensions W x L [cm]	38 x 4500
Pack contents	1 roll
Absorption capacity: [litres/pack]	85
Order No.	**248-905-9D**
Price / Pack	**£ 79.00**
Price / Pack from 3 packs	**£ 75.00**

Absorbent rolls Economy

Special, Heavy version

Practical: The yellow warning colour highlights a potential hazard and allows the absorbed liquid to be clearly seen.

External dimensions W x L [cm]	38 x 4500
Pack contents	2 roll
Absorption capacity: [litres/pack]	211
Order No.	**173-861-9D**
Price / Pack	**£ 169.00**
Price / Pack from 3 packs	**£ 162.00**

Not sure which DENSORB version is suitable for your substance? We have tested the compatibility of our absorbent mats with various chemicals. A complete list can be found at
» www.denios.co.uk/absorbents-guide

2. What application will the absorbent materials be used for?

Multi-talented products for everyday use: Rolls and mats

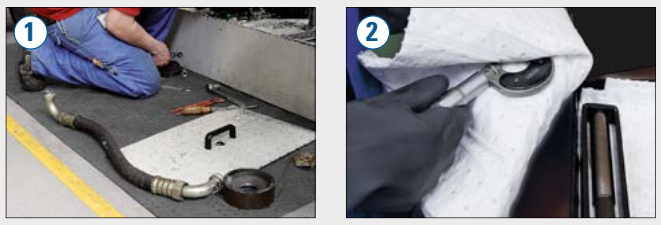
Whether absorbing liquids during maintenance and repair work or effectively controlling leaks – **DENSORB mats** are ready for anything. They're great for economical use in everyday operations and are also perfect for long term applications. If a leak occurs, DENSORB mats absorb any escaping liquids.

Do you usually need a larger quantity of absorbent mats (e.g. for covering a floor) or are you generally using more mats on a daily basis? Then **DENSORB rolls** are the right option for you.

Thanks to the practical perforations, it's easy to tear off just the right amount of mats or roll, using just as much material as necessary.

Applications

1. As an absorbent underlay when carrying out laboratory, repair or maintenance work
2. For the quick, easy cleaning of tools or equipment
3. For long term use, e.g. as a walkway mat or in combination with ergonomic workplace matting to ensure a safe, clean workplace to stand at
4. For soaking up leaked liquids and cleaning up leaks



Practical tools for special applications: e.g. socks and cushions

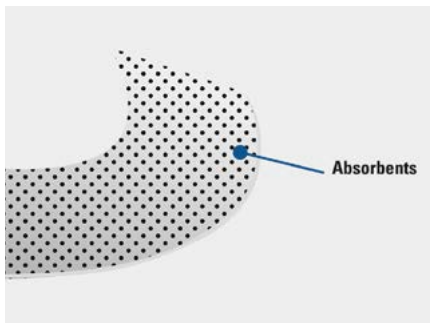
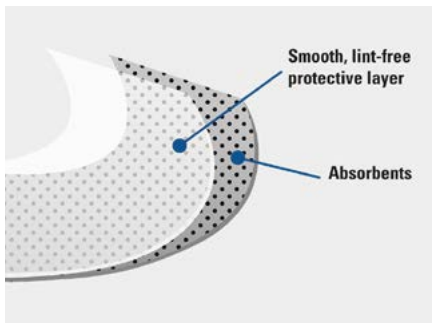
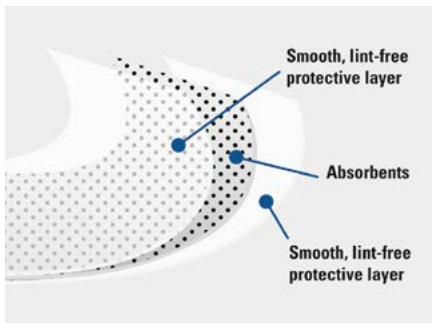
DENSORB socks are essential when dealing with leaks. They have a high absorption capacity and are easy to shape. They are great for containing leaks quickly and easily e.g. from faulty machines or containers.

DENSORB cushions are ideal for reliably absorbing leaked fluids or drips in locations which are hard to access. Cushions are also perfect for long term use, e.g. when dispensing.

Find more practical DENSORB formats such as drum mats, walkway mats, oil barriers, oil dice, oil skimmers and oil sweeps in our Online Shop: » www.denios.co.uk/shop

3. How much liquid will the absorbent materials need to cope with?

The greater the durability, the longer the product will last and the more it can cope with. Depending on your application, you'll also need to consider whether you need a heavy duty version or if a single thickness mat will be sufficient. DENSORB rolls and mats are available with 3 different mat structures:

		
ECONOMY Economy DENSORB mats and rolls are efficient absorbent mats without any additional strengthening on the top and bottom. They are suitable for economical use to clear away leaks or for everyday use during cleaning, repair and maintenance work.	**EXTRA** Extra DENSORB mats and rolls have an additional lint-free protective layer on one side of the absorbent material. This gives better tear and abrasion resistance. Ideal for almost all applications, for example as a heavy-duty floor covering, for long term use or for cleaning tasks.	**ECONOMY PLUS** Choose Economy PLUS DENSORB rolls and mats for the most demanding wear and cleanliness requirements. Both sides of the absorbent mat are strengthened with a permeable protective layer to ensure the highest levels of tear and abrasion resistance. Economy PLUS absorbent mats are also lint-free, so ideally suited to sensitive applications and surfaces.

The durability and absorption capacity are also dependent on the product's material thickness. DENSORB rolls and mats come in two material thicknesses. Choose the right absorbent mats to suit your application.

LIGHT

LIGHT = single material thickness
Flexible and ideal for taking up small quantities of liquids during repairs, small leaks or for general use in production.

HEAVY

HEAVY = double material thickness
Extra thick material with high absorption capacity. The high tear resistance ensures long term use and / or absorption of higher volumes of liquid, e.g. for larger leaks.

Extra absorbent mats

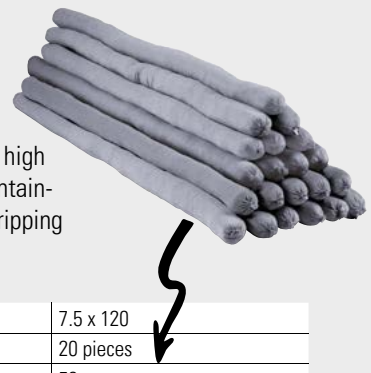
Universal, Light version

Thanks to the protective layer on one side, the material can be used more systematically - e.g. as an underlay with a smooth, lint-free surface.

External dimensions W x L [cm]	40 x 50
Pack contents	200 pieces
Absorption capacity: [litres/pack]	146
Order No.	**243-791-9D**
Price / Pack	**£ 117.00**
Price / Pack from 3 packs	**£ 112.00**

DENSORB socks

Universal version



Filled absorbent materials with a high absorption capacity - ideal for containing leaks or long term use near dripping machinery.

External dimensions Ø x L [cm]	7.5 x 120
Pack contents	20 pieces
Absorption capacity: [litres/pack]	53
Order No.	**123-138-9D**
Price / Pack	**£ 94.00**
Price / Pack from 3 packs	**£ 89.50**

DENSORB Cushions

Oil version

Ideal for long term use , e.g. collecting dripping fluids under pipes, valves, hydraulic lines, flanges, connections and drum taps.

External dimensions W x L [cm]	25 x 25
Pack contents	30 pieces
Absorption capacity: [litres/pack]	49
Order No.	**123-132-9D**
Price / Pack	**£ 113.00**

Varioform absorbent rolls

Oil version

DENSORB Varioform offers 4 formats in one: Use as rolls, socks, mats and wipes.

External dimensions W x L [cm]	48 x 1500
Pack contents	1 roll in a dispenser box
Absorption capacity: [litres/pack]	29
Order No.	**181-147-9D**
Price / Pack	**£ 52.00**

Do you need individual advice?
Get in touch! Our expert team would be happy to help.

01952 700 572

DENSORB PRODUCT CHECK

When a liquid has leaked, one thing is important: how quickly, safely and thoroughly it can be removed. However, other factors, for example the cost of cleaning up, can also have an important role to play. Companies often choose to use mineral granules for binding liquids in every situation. Are DENSORB absorbent mats an alternative? We wanted to know so we put both products to the test in a tough performance comparison. The criteria: absorption capacity, application, cost, time needed and storage.

ABSORBENT MATS

VS.

MINERAL GRANULES

Our PRODUCT TIPS

Economy absorbent rolls

Universal, Heavy version

Absorbent mat with an open, fine-fibre structure on both sides for quick absorption of leaked fluids. Suitable for universal use in production and the workshop.

External dimensions W x L [cm]	76 x 4500
Pack contents	1 roll
Absorption capacity: [litres/pack]	211
Order No.	**173-866-9D**
Price / Pack	**£ 156.00**
Price / Pack from 3 packs	**£ 148.00**

Accessories:
Roll stands including cutting edge for rolls up to 80 cm wide
Order No. 136-487-9D, £ 113.00

Economy absorbent mats

Universal, Light version

The ideally sized mats are also perforated in the middle for economical use.

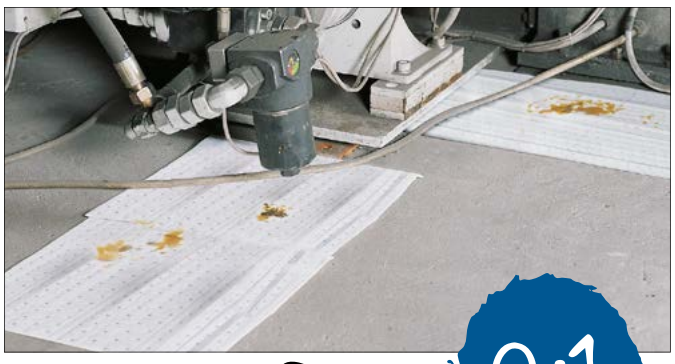
External dimensions W x L [cm]	40 x 50
Pack contents	200 pieces
Absorption capacity: [litres/pack]	160
Order No.	**175-014-9D**
Price / Pack	**£ 113.00**
Price / Pack from 3 packs	**£ 107.00**

Absorption capacity

When dealing with a leak, the fewer absorbent materials used to absorb the leaked liquid, the better. Which product has the highest absorption capacity?

	Diatomaceous earth granules	DENSORB Oil absorbent mats
Absorption capacity	Approx. same as own weight	Up to 16 times own weight

The excellent capillary action of DENSORB absorbent mats guarantees uniform distribution of the liquid absorbed and therefore ensures ideal use of the absorption capacity. DENSORB absorbent mats can absorb up to 16 times more liquid than mineral granules.



Test result:

More is more - the points go to
DENSORB absorbent mats.

0:1

Area of application

The area of application is the most important issue for an absorbent material when cleaning up leaks and drips. We put our competitors through their paces in detail: Are there differences in terms of flexibility? Which product can be used in all situations?

Indoors
Indoors, DENSORB absorbent mats impressed with their flexibility. In contrast to granules, they are not only suitable for cleaning up leaks, but can also be used for many other purposes: for example as an underlay for repair, cleaning and maintenance work or for wiping down dirty surfaces and parts. They can also be used long term, for example on machinery where drips often need to be contained. DENSORB is also a real alternative to dusty granules in areas where cleanliness is desired or is required.

Mineral granules only have an advantage here in rare applications: for example when extremely hot liquids need to be cleared up. DENSORB absorbent mats have a melting point of 160°C. At higher temperatures, granules are the best option to choose.

Outdoors
Granules are often used outdoors and on roads. There is a good reason for this: granules get into all the small depressions helping to better absorb liquids on rough and cracked surfaces. They also ensure good levels of grip.

DENSORB absorbent mats have an advantage in one special application: on water. Granular oil binders have a distinct disadvantage here in terms of environmental damage (see page 10 for more details). A good alternative is to use floating DENSORB oil mats and barriers.

Test result:

A draw! While DENSORB absorbent mats impress with their application flexibility indoors and on water, granules are more appropriate for rough surfaces outdoors and for special cases such as absorbing extremely hot liquids. Both sides win a point here.

1:2

Costs

Let's be honest - cost is always going to play an important role for companies. We've done the calculations: How much does it cost to absorb 10 litres of oil using absorbent mats compared to mineral granules?

DENSORB absorbent mats absorb oil up to 16 times their own weight. Thanks to the higher absorption capacity, less material is needed so less waste is produced. If we take purchase and disposal costs together, you would save an impressive 60% compared to conventional granules!

An additional advantage: when using granules, you quickly tend to spread more than you really need. DENSORB absorbent mats make it much easier to use just the right amount.

	Diatomaceous earth granules	DENSORB Oil absorbent mats
Quantity needed	12.5 kg	3.28 m x 0.76 m Economy Light
Purchase costs	£ 14.06	£ 4.41
Disposal quantity	21.5 kg	9.95 kg
Disposal costs (e.g. € 0.65 / kg)	£ 12.29	£ 5.69
Total cost	£ 26.35	£ 10.10

Test result:

The point for lower costs clearly goes to DENSORB absorbent mats.

Time needed

Time is money, they say. But when you're faced with a leak, losing time cleaning it up also poses an additional risk. We recorded the time our testers needed to use both products.

DENSORB absorbent mats absorbed the leaked liquid visibly faster than the granules: DENSORB also has advantages after the cleaning up has been done: While granules have to be swept together and then shovelled up, absorbent mats are quick to collect and dispose of. When granules are trodden everywhere because they have stuck to your shoes, they make even more work.

	Diatomaceous earth granules	DENSORB Oil absorbent mats
Time needed	20 minutes	3 - 5 minutes

Test result:

DENSORB absorbent mats have made the running and gain the point for shortest time needed to clean up the leak.

Storage

When it comes to storage, companies want to use as little space as possible. Which product will take up more valuable space for storage? DENSORB absorbent mats or granules? For our test we compared the amount of absorbent materials needed to absorb 10 litres of oil.

	Diatomaceous earth granules	DENSORB Oil absorbent mats
Storage volume and quantity	25 litre (12.5 kg)	5 litre (0.95 kg)

The low weight and volume of DENSORB absorbent mats is clear - for the same absorption capacity much less storage space is needed.

Test result:

Space saved, storage space gained – another point for DENSORB absorbent mats.

Our overall verdict:

DENSORB absorbent mats are a reliable, flexible aid in many situations, saving you time and money.
In many cases they are clearly the better, more economic alternative to granules. We recommend that you use your risk assessment to check which substances you handle in your company and what tasks are undertaken using these substances. Depending on your specific application, select the type and quantity of absorbent materials which you will need to keep in stock for daily use and to cover emergencies. If you can't do without granules, we also offer a proven selection of mineral and non-mineral products in our range.

Economy absorbent rolls

Oil, Light version

Ideal, for example as an underlay under dripping machinery.
Practical: the white colour helps identify saturation level.

External dimensions W x L [cm]	38 x 4500
Pack contents	2 roll
Absorption capacity: [litres/pack]	137
Order No.	**173-859-9D**
Price / Pack	**£ 75.00**
Price / Pack from 3 packs	**£ 71.50**

Accessories:
practical wall holder incl. cutting edge
For rolls up to 40 cm wide
Order No. 116-579-9D, £ 43.50

Economy absorbent mats

Oil, Heavy version

For fast use on leaks or for wiping down

External dimensions W x L [cm]	40 x 50
Pack contents	100 pieces
Absorption capacity: [litres/pack]	124
Order No.	**175-016-9D**
Price / Pack	**£ 94.50**
Price / Pack from 3 packs	**£ 89.50**

All-weather oil binder, type III R

Polyurethane foam-based granules

Suitable for use on high traffic areas and roads, even in the rain and wet.

Contents [kg]	20
Absorption capacity: [litres/pack]	24
Bulk density [g/l]	405
Granule size min– max [mm]	1 – 4
Order No.	**123-167-9D**
Price / Sack	**£ 24.00**
Price / Sack from 10 sacks	**£ 21.50**

Chemical and acid binder Multi-Sorb, type III R

Polymer compound granules

An absorbent for all hazardous materials.
A striking colour change (yellow when in contact with acids and red for alkalis

Contents [kg]	5
Absorption capacity: [litres/pack]	9
Bulk density [g/l]	425
Granule size min– max [mm]	0.13 – 0.5
Order No.	**201-754-9D**
Price / Pack	**132.00**

More choices and additional formats can be found in our current main catalogue and our Online Shop.

» www.denios.co.uk

Our PRODUCT TIPS

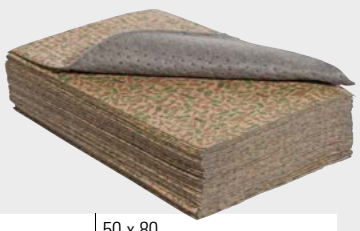
ENDURANCE TEST FOR STRINGENT DEMANDS

DENSORB absorbent mats can be used in many application areas. They often have to withstand a lot, for example when they are used as a long term underlay near machinery. We subject our products to detailed load and quality tests in our own in-house laboratory so that we can ensure that they perform properly in your company. The requirement: consistent high quality for every product.
A quality check is always needed when a product has just been developed, but long term quality also needs monitoring. We base this on the American Society for Testing and Materials (ASTM) standard. We test in detail whether the product quality meets our requirements over many repeated tests using comparative measurements.

Camouflage absorbent mats

Reliably absorb almost all liquids with a hydrophilic design

The camouflage design hides stains and dirt ensuring a long life.



External dimensions W x L [cm]	50 x 80
Pack contents	50 pieces
Absorption capacity: [litres/pack]	110
Order No.	**196-540-9D**
Price / Pack	**£ 113.00**
Price / Pack from 3 packs	**£ 107.00**

Long life outdoor mats

Developed for outdoors, water-repellent and UV-stable

Reliable absorption of engine oil, diesel, heating oil, oil-based solvents etc and more

External dimensions W x L [cm]	145 x 2400
Pack contents	1 roll
Absorption capacity: [litres/pack]	176
Order No.	**204-220-9D**
Price / Pack	**£ 377.00**
Price / Pack from 3 packs	**£ 358.00**

"Extra" non-woven rolls

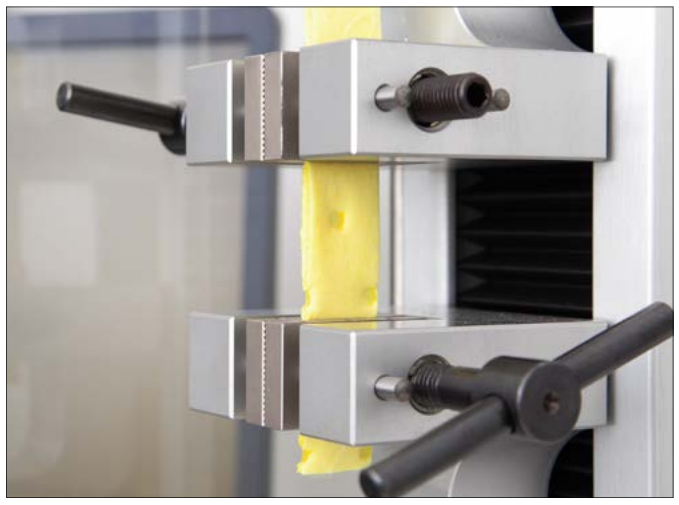
Reliably absorb practically all liquids and retain them

With an anti-slip and liquid-proof PE coating on the bottom. Also suitable for heavy duty use such as forklift traffic.

External dimensions W x L [cm]	100 x 3000
Pack contents	1 roll
Absorption capacity: [litres/pack]	59
Order No.	**129-635-9D**
Price / Pack	**239.00**
Price / Pack from 3 packs	**227.00**

Tensile strength / elongation (ASTM 5035)

Depending on version, DENSORB absorbent mats need to withstand significant, long term stresses. High tear resistance is important when the application involves high mechanical loadings. If an absorbent mat is used as an underlay in a workplace for example, walking on it should not cause any appreciable damage - you don't want to have to change the mat more than necessary. When wiping down sharp-edged surfaces a correspondingly high mechanical load is also involved. We demonstrate this with a tensile strength / elongation test. Test pieces are prepared in the form of cut strips (150 x 25 mm). They are clamped in a force/displacement measuring device and stretched at a constant speed. Did the material withstand the required load? Only when the answer is "yes" will the next test step be carried out.



Weight (ASTM 3776) and thickness (ASTM 5736)

The low weight of our DENSORB absorbent mats is an important quality factor as it contributes significantly to lower disposal costs. It also ensures that handling and storage are much easier for the user. For this reason we examine the basic properties of the material, weight and thickness, in our tests. Test pieces with a diameter of 113 mm are prepared, measured and weighed. If the test pieces meet the prescribed set values, we'll give them the green light.

Absorption (ASTM 726)

One of the most important tests is of course absorption capacity. DENSORB absorbent mats absorb oil up to 16 times their own weight, visibly quicker than conventional absorbent materials, giving optimal results when cleaning up leaks. Absorption capacity is also demonstrated in our test lab. The test piece is immersed in oil for 30 seconds. It is weighed before and after to determine the absorption quantity which is the weight difference. If the required performance is proven: the test was passed!

Only products which withstand all the challenges and meet our quality criteria make it into the DENSORB range.

Take a look for yourself!

Would you like to take a look at the excellent properties of DENSORB absorbent mats for yourself? Not a problem! Order our **free DENSORB sample kit** and carry out your own quality tests. Simply place an order and you'll quickly receive 4 free absorbent mats in various versions.

Contents:
1 Economy Plus absorbent mat 40 x 50 cm
1 Premium absorbent mat 40 x 50 cm
1 Extra absorbent mat 40 x 50 cm
1 Economy absorbent mat 40 x 50 cm

£ 629.00

Mobile emergency spill kit , Special version, in DENSORB Caddy Medium
Dimensions L x W x H [cm]: 59 x 61.5 x 109
Order No. 259-471-9D

The ideal equipment for an EMERGENCY

**Experience has shown:
something else will always go wrong.
But when an appropriate emergency spill kit is to hand, you can react quickly. With our practical DENSORB emergency spill kits you'll get to the incident quickly and have the right tools to hand.**

Safety first

A leak must not be tackled under any circumstances if suitable personal protective equipment is not available. Safety glasses, protective gloves and safety shoes are the minimum required. The contents of our DENSORB emergency spill kits have already taken this into consideration. Goggles with an elastic strap and a pair of protective gloves are always provided. Depending on the substance, other equipment such as respiratory protection or whole body protection may be needed. Consult the operator's instructions or material safety data sheets.

Ready for any emergency

The transport trolley offers a clear overview and is packed full of high quality DENSORB absorbent materials for dealing with leaked fluids.

- A perforated absorbent mat roll (45 m x 38 cm), allowing you to tear off just as much material as is needed
- 2 absorbent cushions (25 x 25 cm), ideal for dealing with drips
- 25 wipes (38 x 40 cm), for wiping clean any residues and small amounts of contamination from equipment
- A sack of granules (10 kg) incl. a granule shovel, to help ensure the floor is not slippy, if needed

Secure the area

The incident site should be secured so workers do not accidentally come into contact with the leaked fluid or spread it further on feet or forklifts. There's a warning sign already included in our emergency spill kit.

Stop leaks and contain them

One of the first steps should always be to prevent a leak from spreading.
The emergency spill kit contains 7 absorbent socks (120 x 7,5 cm), to efficiently contain leaks.

Ready to use at any time

The practical transport trolley ensures materials are transported quickly to the incident site. It also protects the contents from dust and damp and ensures that the emergency equipment is ready to use at all times.

Help with disposal

What should you do with saturated absorbent mats? We've already thought about it. The emergency spill kit contains 10 practical disposal bags to collect used absorbent mats.

[+] Order at the same time

Folding reusable spill tray

For securing damaged containers on a temporary basis

Quick and easy to use.
With integrated level indicator.
External dimensions L x W x H: 1240 x 840 x 225 mm
210 litre containment volume

Order No. 206-987-9D, £ 384.00

[+] Order at the same time

Sealant mat

For sealing drains and gulleys

Prevents liquids seeping into the ground or sewage system.
Dimensions: 80 x 80 cm

Order No. 129-674-9D, £ 367.00

[+] Order at the same time

T-coded drum overpacks in steel, 320 l

for storing 205 litre drums

Approved for salvage and transport (UN approval 1A2 T / Y446 / S / ... / D / BAM...).

Order No. 157-698-9D, £ 377.00

DO THE RIGHT THING IN AN EMERGENCY

OUR EXPERT LECTURER SHOWS YOU HOW

Tobias Authmann is a qualified biologist and has worked as a specialist HazMat storage lecturer for the DENIOS Academy for the last seven years. His specialist area is accident prevention, with an emphasis on hazardous material storage and handling. He is well known across a wide audience as an expert and competent advisor. His practical "Emergency leak training" course gives you the necessary expertise to avoid and handle hazardous substance leaks. We spoke to him about his experience.

Qualified biologist

TOBIAS AUTHMANN

HazMat storage expert
Fire prevention / safety officer

EMERGENCY LEAK TRAINING

LEARN FROM THE PROFESSIONALS

Order No.: 211-123-9D
Price on Request

DENIOS ACADEMY

We'll help you prepare for an emergency, on site in your company!

The emergency plan for a leak should not only be publicised in your company, it should be practised. The "Emergency leak training" seminar in the DENIOS Academy is run by professionals and will teach the right behaviour in an emergency to optimise your internal risk management. Training is carried out on site at your premises by our HazMat experts. This gives you the opportunity to adapt the contents of the seminar to your actual situation.

Interested? Book your training now!
» 01952 700 572

DENIOS ACADEMY

Mr Authmann, what do you consider to be the main cause of accidents with hazardous liquids?

Wherever substances are being moved or handled, there's always the possibility of a leak. This includes handling substances in the workplace, but also the whole process of moving substances into and out of storage. Particularly at risk for example are areas where larger containers are being put into or taken out of storage using lifting equipment or industrial trucks, or they are being loaded on or off lorries.

Do you look at emergency measures in the event of a leak in the emergency leak training course? Who attends these courses?

The emergency leak training course is primarily aimed at users of hazardous substances. It's therefore suitable for anyone working in a store or workbench environment using hazardous substances. They would be first on the scene in the event of a leak and need to know the right thing to do quickly. Participants have also included safety specialists, who handle emergency planning and precautions.

There's a lot of interest in your training courses. What are the biggest concerns people have?

That's not an easy question to answer as the situation differs greatly between companies. It also comes down to whether and how much you have already thought about the subject beforehand. Large companies tend to be well prepared as they are looking to gain certification or ensure systematic environmental management. They are interested in optimising the individual steps in their practical plans for handling a leak. Other delegates have a more fundamental question: why should we bother with leak management at all? To answer this I emphasise the legal aspects and the question of liability. Others have the issue that their employees don't have a clue about where to find absorbent materials in the event of an incident. So you see, the concerns people have vary widely. For this reason, I always adapt the training content to the customer's needs and take time during the course to address the specific concerns that they have.

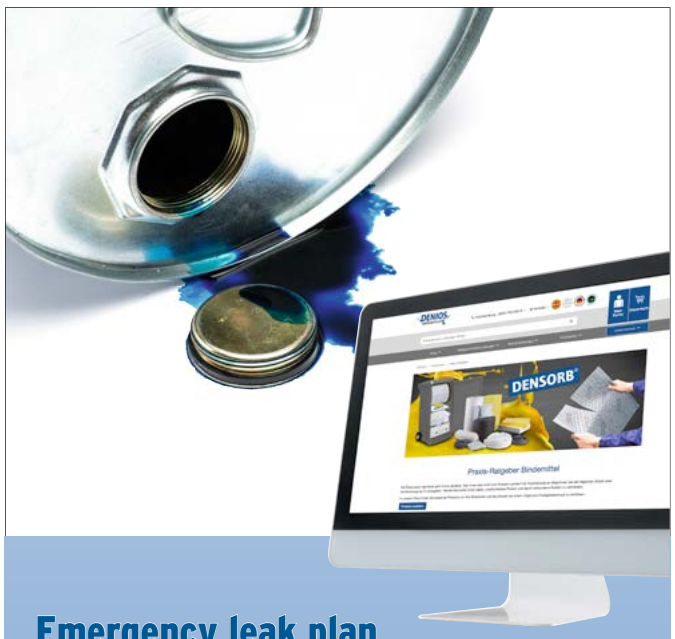
In your experience, what are the biggest mistakes that people make when preparing emergency spill kits?

One of the worst things that can happen in an emergency is not having enough absorbent materials to hand. This could be due to incorrect calculation of quantities required, for example. There is a technical rule for calculating the required volume of a spill pallet. It must be able to contain the contents of the largest container stored above it. In the same way, you need to calculate the volume of the containers at the risk site as a potential leak volume and prepare absorbent materials with the corresponding absorption capacity. If you only have materials for a 205 litre drum and an IBC splits open, you'll never control the leak, regardless of how well the employees are trained and prepared. The use of absorbent materials in daily operations is also an important subject to discuss. Often you'll come across typical minor leaks at work, when something spills or is lubricated. Absorbent materials get used for this purpose too and so the stock gets gradually depleted. Then the dreaded day comes when a large accidental leak occurs and there are suddenly no longer enough absorbent materials remaining.
For this reason I always recommend that daily materials and emergency materials are kept separately. Daily materials can be supplied on a roll on a wall holder for easy employee access, while emergency materials should be kept separately in a sealed box. As a minimum, usage should be documented and the materials replaced and reordered when a certain level is reached. It makes sense to specify this in the operator's instructions and to make someone responsible for regularly checking the stock level.
Of course it's a disaster if, when the worst happens, the right materials are not available. In general, the following questions should be asked in advance: What liquids do we have on site? What quantities are we dealing with? Where are they stored and where do we work with them? Where is it most likely that a leak will happen, so where is there an increased risk? This can all be calculated in advance so that suitable absorbent materials can be provided near at-risk areas.

Why is it important to train for an emergency?

That's obvious - so that no time is lost when an emergency occurs. Companies don't just need to prepare a proper emergency plan, they also need to communicate it and test it beforehand, just like you carry out a fire drill in case of fire. This is not only sensible as a way of determining any areas of weakness in the plan which need to be addressed, but also as a way of ensuring that everything runs smoothly. If a leak occurs right next to a floor drain or gully, everything needs to happen smoothly and quickly. If workers are not trained as well as they could be, then you have a problem reacting quickly enough and are possibly going to make risky mistakes, for example treading the leaked fluid around the site, incorrect use of PPE or causing contamination during disposal. Regular practice runs can get employees accustomed to the right procedures, allowing them to make mistakes under non-hazardous conditions and to learn from them. In my experience there's always something to improve - the training sessions I have attended rarely go smoothly from start to finish.

HELP IS AT HAND:



Emergency leak plan in just 10 steps

If a leak occurs there's not much time to ponder possible measures. Any company using, processing or storing hazardous substances needs to have an emergency plan for dealing with leaks. Order your free DENSORB 10 point emergency plan poster: order No. 259-809-9D

By the way: You'll also find the DENSORB emergency plan available to download from our website.

Our specialist lecturer Tobias Authmann shows how you can get to grips with leaks in 10 easy steps in our video.

www.denios.co.uk/absorbents-guide

What can the participants in your training course look forward to?

Emergency leak training ensures the participants are ready to react correctly to an emergency. First of all we look at statutory information, emergency measure planning and emergency equipment in a theoretical section. The actual application of this knowledge to a leak situation is then repeatedly tested in a practical session. I'll give advice on how you could optimise things, correct errors and also give information on all the little tricks which can save time and ensure safety in an emergency.
When I put together a training course I take care to ensure I consider the individual company's specific concerns. I'll speak to the company beforehand to find out what particular hazards they face, what substances they handle and if necessary, if there are particular operator's instructions which need to be considered. Then the customised training can start.
It's also important to me that we practice under realistic conditions, so with the right container sizes. If the company usually handles 30 litre canisters, we'll work with canisters. If they use IBCs then the training course will run with IBCs.

Final question. What is the most important thing when dealing with a leak?

The most important thing is to assess the situation correctly. What has leaked? In the worst case scenario what hazards are presented by the leaked liquid? And then don't go near it unless you have suitable protective equipment!
I often get asked by course participants: "Can I not do this or that first? Otherwise we'll lose so much time!" But when we have done one thing, it's only human to go on and do the next thing. And then one more and one more - and before we know it we have somehow got the chemical on our skin, been poisoned or injured in another way. It's important that the participants leave knowing that they must not do anything before they have ensured they are protected. Personal safety is vital.
As a minimum they should always have protective gloves, safety glasses and sealed safety shoes. Depending on the risk posed by the leaked liquid they may also need respiratory protection or full protection suits. The operator's instruction should also stipulate that from a certain volume of leak or substance hazard level an external service, e.g. the works fire team rather than employees should be called to handle the clean up.

WHEN EVERY SECOND COUNTS:
OIL SPILLS ON WATER

Incidents involving hazardous substances don't just occur on land. Again and again we hear of incidents involving oil spills on water, with serious consequences. It's the sad reality of large scale catastrophes which reach the ears of the general public: tankers run aground, pipelines leak, accidents happen on oil rigs. But seemingly small scale oil leaks can also have catastrophic effects when they affect a local body of water. A single drop of oil can spread in no time at all, contaminating up to 1000 litres of water. But how can companies take precautions? What kinds of equipment are needed for an emergency? And what happens when something happens? We answer the most important questions here.

Good reasons for active emergency provision

If a company handles water-polluting substances it must use a risk assessment to identify potential sources of hazards. In addition to the corresponding safety measures it must also prepare an emergency plan to deal with leaks. The local circumstances may also mean that the company needs to prepare for incidents involving oil spills on water, for example if there is a body of water on or directly next to the operating site, oil pipelines run near to water or there are drains present into which oil could penetrate by accident.

Oil spills on water generally need to be reported and are a situation for the fire brigade to handle. However the emergency plan should not be limited to just calling 999 in the event of an emergency and waiting for the professionals to take over. The most treacherous thing about oil spills on water is the speed with which the liquid spreads out on the surface of the water. On flowing water, the oil film will advance relentlessly downstream, the damage spreading with every second. The fire brigade will take time to arrive on site, meaning vital minutes can be lost. It makes sense to stop the oil film from spreading using quick emergency measures. By doing this companies will not only minimise environmental damage but will also reduce the costs they will have to pay for causing the incident.
Oil spills on water can be expensive: If you allow hazardous substances to enter water and cause damage, you are not only liable to pay damages but will also have to bear the costs for the clean up. Insurers will also keep an eye on things to see if sufficient emergency preparations were made for the corresponding hazards. Companies would therefore be well advised to look at suitable emergency measures as a priority.

It can be useful to cooperate with the local fire brigade when carrying out emergency planning . The relevant fire service may also visit a company themselves if they recognise that there is a potential risk. By working together, both sides can benefit by sharing ideas for preparing an emergency plan and agreeing suitable emergency equipment. Often there is a form of cooperation where suitable special fire brigade equipment is put in place directly by the company. The company can then be sure that the right equipment is in the right place if an emergency arises. The fire brigade will benefit from having equipment in place locally, which could then be used at other incidents if required. In these cases, it's generally the rule that materials used are replaced by the company. All in all it's a win-win situation.

The A - Z of emergency response - determining suitable measures and equipment

Actual emergency measures will always depend on the risk assessment, as will the emergency equipment needed. If we look at an example emergency response, it's quickly obvious what's needed.

The response begins - of course - with the discovery of a leak. If an oil spill is noted on water or a leak is found where oil is getting into water, the fire brigade are generally notified first of all. The fire brigade office then informs the other relevant parties as determined in the response plans, for example the relevant water authorities or local specialist companies. If third parties, especially operators of sewage plants or water supply companies, are affected, they also need to be kept informed of the hazardous situation.

In an ideal situation emergency measures are taken straight away. First of all life-saving measures are taken if needed. Then:

The leak should be stopped at its source as quickly as possible to prevent the damage from spreading. Oil barriers should be deployed on the water to prevent the oil film from spreading out. Oil barriers are differentiated into active and passive systems. Passive barriers consist of a submerged guard in a special liquid-proof fabric with internal floats. They are fixed between banks using an anchor system. The lower edge of the guard is weighted down so it does not float on the water. When the oil barrier is used, the oil is collected on the surface of the water, while water flows under the oil film. The oil can then be pumped away or taken up using absorbent materials. Active barriers are water repellent and float on the surface of standing and slow flowing water.
They are filled with highly absorbent polypropylene fleece which absorbs the oil. Active barriers work especially well when combined with a passive system: While the passive system forms the actual oil barrier, the active barrier can take up most of the leaked oil and then be retrieved in one piece using the rope.

!

- **Secure the incident site**
- **Assess the type, quantity and hazard level of the leaked substance**
- **Stop the leak and prevent damage from spreading**
- **Contain and take up the water-polluting substance**

Passive oil barrier set

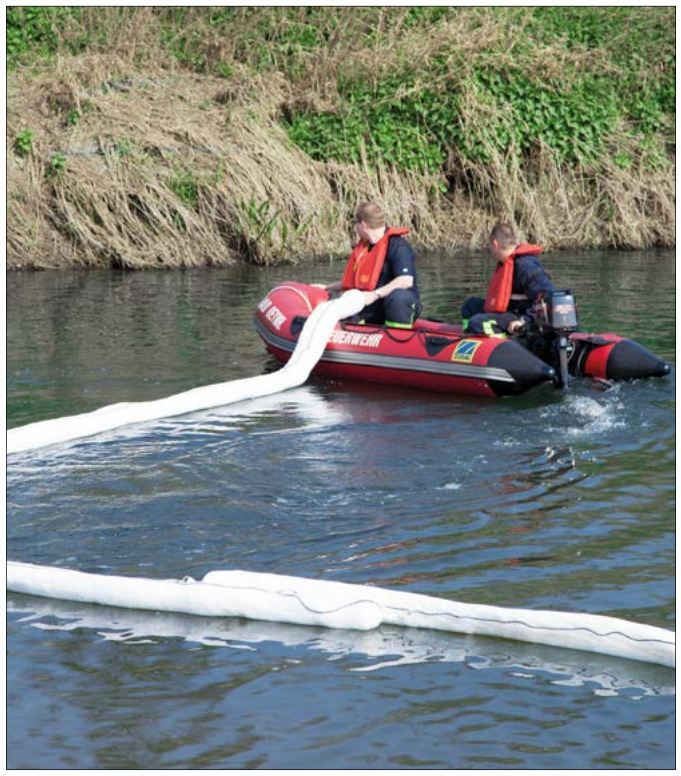
In weather-proof container in polyethylene (PE),

Contents:

2 x 5 metre oil barriers
4 high-speed couplings (centre bars)
2 bank end pieces, single
1 bank distribution piece
3 pegs 1000 x 18 mm
3 x 15 metre floating ropes
1 sledgehammer 3 kg
10 disposal bags
5 oil skimmers 60 x 40 cm
5 pairs protective gloves

Order No. 201-653-9D, £ 1708.00

Expansion pack available online.



If particular risk areas are noted, preparations can be made for the use of oil barriers in advance. For example suitable barrier locations can be determined in advance so that you don't need to chase after the oil film in an emergency but can catch it at a suitable barrier point. Criteria such as favourable flow conditions, safe access routes and suitable mounting points for the equipment used can also play an important role.

The oil barrier design is largely determined by the water conditions. Are you dealing with still or flowing water? What width, depth and flow speed need to be considered? If oil barriers are fitted with a submerged guard, the immersion depth depends on the depth of the water and the length of the barrier depends on the width of the water. At high flow speeds you will need to remember that the oil barrier should not be attached at right angles to the bank, so that the speed of approach is limited and the forces on the barrier are therefore reduced. For these reasons, longer oil barriers should also be used in individual cases. These practical products consist of individual elements which can be quickly joined together. This allows a flexible response based on the size of the incident or the type of water in question. When using oil barriers it is also important not to set the anchor point on the bank too high, otherwise oil could run under the barrier. If needed, additional absorbent mats can be used on the bank.
Strong currents can also force oil under the barrier. The use of several barriers would be sensible in this instance, spaced at a certain distance from each other to ensure better safety. Oil which has gone under the first barrier should be trapped by the next barrier.

Absorbent materials to take up the oil from the surface of the water should be provided in the quantities specified in the risk assessment. Often oil binders in the form of granules are used but these have certain disadvantages. Once spread out on the oil spill, the absorbent material must then be removed from the water once it has absorbed the oil. This is often difficult and complete removal is generally impossible. Depending on the flow of the water, the material is quickly swept to the banks and gets trapped in vegetation. Granules may also poison the water fauna. Granule grains partially contaminated with oil can be mistaken for food by birds and fish. Depending on the size of the incident, they can cause their death. All these negative consequences can be avoided by using oil absorbent mats, without losing any functionality. Floating oil absorbent mats are made from a fleece material. They are manufactured from 100% polypropylene and are naturally water repellent (hydrophobic) and attract oil (oleophilic).

They are easy to distribute on the oil spill and can be easily collected up as they still float even when saturated. There is no need for costly raking of the water surface as is the case with granules. Absorbent mats are available individually or on a roll so that long sections can be torn off to provide protection for river banks. Oil contamination on the banks can then be collected up and limited. Oil sweeps and, as already mentioned, active oil barriers are ideally suited to removing any remaining oil film.

The need for any additional measures and equipment will depend on the the individual circumstances. How many people are needed? Does everyone know the action plan? How can the equipment be quickly transported to the incident site? Is additional equipment needed such as boats, anchors, lines, tools or lights? All these questions need to be asked beforehand so that you can react as quickly as possible in the event of an emergency. It pays to have active emergency planning for the worst case scenario.

Good to know

There are generally additional consequences to a successful intervention. In addition to the correct disposal of contaminated materials, the relevant authorities often require monitoring to be carried out to determine any residual effects.

We would be pleased to provide you with advice!

Whether on land or on water we would be pleased to provide you with advice on suitable products to find the optimum solution for your application. Give us a call. Our expert team would be happy to help.

01952 700 572

Our PRODUCT TIPS

Active oil barriers

for oil and hydrocarbons

Practical spring clips allow the individual segments to be quickly connected to create an oil barrier of the required length.

External dimensions Ø x L [cm]	13 x 305
Pack contents	4 pieces
Absorption capacity: [litres/pack]	123
Order No.	**128-555-9D**
Price / Pack	**£ 164.00**
Price / Pack from 3 packs	**£ 156.00**

Economy absorbent mats

Oil, Heavy version

Ideally suited to removing oil or fuel from the surface of water.

External dimensions W x L [cm]	50 x 40
Pack contents	100 pieces
Absorption capacity: [litres/pack]	96
Order No.	**189-447-9D**
Price / Pack	**£ 73.50**
Price / Pack from 3 packs	**£ 69.50**

Oil sweeps

For oils and hydrocarbons

Can be shortened to the required length. With retrieval rope.

External dimensions W x L [cm]	48 x 3000
Pack contents	1 pieces
Absorption capacity: [litres/pack]	94
Order No.	**170-342-9D**
Price / Pack	**£ 174.00**

Oil barrier combination

for oil, petrol and hydrocarbons

Combination of oil barriers with an absorption action and reusable plastic submerged guards. The submerged guard acts as a barrier, directing the liquid floating on the water to the oil barrier.

External dimensions W x L [cm]	30 x 12
Absorption capacity: [litres/pack]	96
Order No.	**215-814-9D**
Price / Pack	**£ 508.00**

ABSORBENTS - FAQ
NO QUESTIONS UNANSWERED!

There are always questions when buying, storing and using absorbent materials. It's best to find out about the most important do's and don'ts beforehand. When a leak occurs there's never going to be enough time to clarify unanswered queries. To help, we've put together the most common questions about absorbent materials here.

Stocking up and storing

What supplies of absorbent materials should I always keep at hand?

In accordance with the latest health and safety regulations, the employer must carry out a risk assessment to determine whether there are any risks for employees or other persons from the storage or handling of hazardous substances. Suitable remedial measures are to be defined as part of this risk assessment. Check which liquids will be used on a daily basis.
Take note of the type and quantity of substance involved and which tasks involve which liquids. You should always have sufficient suitable absorbent materials available to absorb these liquids.

How long can absorbent materials be stored? What do I need to consider when storing them?

Absorbent materials in polypropylene should be protected from long term exposure to UV and need to be kept dry. Temperature is not an important factor for storage as their melting point is 170° C. When these criteria are met, the materials may be stored for a long time. The products should be tested at regular intervals to ensure they are still suitable for use.

Application

Should I test absorbent materials before use?

The compatibility of DENSORB absorbent materials has already been tested for various chemicals and is shown in a compatibility list. This can be found at www.denios.co.uk/absorbents-guide
DENIOS is unable to guarantee absorption capacity due to factors outside its control. For your own safety we recommend carrying out a suitability and absorption test using DENSORB absorbent materials and your particular chemicals before purchase.

What do I need to consider when working with absorbent materials?

DENSORB absorbent materials are made from polypropylene with a melting point of 160°C and an ignition temperature of 430°C. They should therefore be kept away from hot surfaces and open flames and should not be used for taking up extremely hot liquids.

Care with used absorbent materials: the type of liquid soaked up and its saturation level have a considerable impact on the flashpoint, which can be significantly lowered in extreme cases. In the event of an accident involving oil or when volatile chemicals are absorbed, explosive gas and vapour-air mixtures can occur so care needs to be taken to avoid the risk of ignition through static discharge.

After use

How are saturated absorbent materials disposed of?

Used absorbents materials must be disposed of in accordance with statutory regulations. Final disposal depends on the liquid absorbed as the absorbent material will take on its properties. Absorbent materials saturated in mineral oil are classified as waste requiring special monitoring and are disposed of as oily waste. Within the EU the waste code number is to be determined with the disposal company.

Have a different question? Not a problem!
Get in touch with us direct and we'd be delighted to help.

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