THE SMP PERMEATION BARRIER FROM SCHÜTZ
The SMP method developed by SCHÜTZ effectively seals plastic containers to ensure that leakage of contents (permeation) is reliably prevented.

Impervious with Surface Modified Plastics (SMP).

The premise of the SMP process lies in the replacement of hydrogen atoms by fluorine atoms, occurring in the chain of carbon atoms of the polyethylene macromolecules. As a result of 3-stage chemical densification of the molecular chain of polymers, a perfectly even layer (PTFE) – similar to Teflon – is formed on both sides of the container, which significantly increases the protective properties of the material. The concentration of fluorine and length of treatment depend on the specific permeation requirements. The result: SMP treated storage and transport packaging minimizes the permeability of container walls.

After adaption to customer-specific requirements, the treatment of plastic containers with fluorine gas is guided and controlled by processors. State-of-the-art production plants and our complete quality control guarantee maximum performance of the SMP permeation barrier.

SCHÜTZ SMP: prevents your products from vanishing into thin air.

<table>
<thead>
<tr>
<th>Weight loss in %</th>
<th>Untreated</th>
<th>SMP fluorinated</th>
</tr>
</thead>
<tbody>
<tr>
<td>petrol</td>
<td>77,2</td>
<td>1,8</td>
</tr>
<tr>
<td>diesel fuel</td>
<td>5,1</td>
<td>0,05</td>
</tr>
<tr>
<td>fuel oil</td>
<td>4,3</td>
<td>0,05</td>
</tr>
<tr>
<td>white spirit</td>
<td>13,0</td>
<td>0,1</td>
</tr>
<tr>
<td>xylol</td>
<td>70,8</td>
<td>4,2</td>
</tr>
<tr>
<td>cyclohexanone</td>
<td>2,9</td>
<td>0,6</td>
</tr>
<tr>
<td>heptane</td>
<td>37,7</td>
<td>0,2</td>
</tr>
<tr>
<td>naphtha</td>
<td>21,2</td>
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</tr>
<tr>
<td>toluol</td>
<td>47,5</td>
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Test conditions:

* 250 days at 40°C – 5 l canister, 1 mm wall thickness non-pigmented HDPE
** 28 days at 50°C – 473 ml HDPE bottle, non-pigmented

SCHÜTZ PE drum with fluorinated internal and external layer
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Economical, safe and environment-friendly.
SMP treated synthetic containers offer complete safety during transport, economical storage and high resistance to solvents. Double-sided fluorination significantly reduces the permeation of filling goods and improves the chemical resistance of easily flammable, toxic or corrosive substances. In return, the environment benefits from the extremely low rates of permeation. Additionally, SMP fluorination provides an extremely effective odour barrier regarding gasoline, diesel fuel, and fuel oil. The superior mechanical properties of HDPE, including resistance to extension, expansion, hardness, resistance to cracking susceptibility as well as thermal properties and low-temperature behaviours are not influenced by SMP treatment.

Extremely low permeation rates are of benefit to the environment and to living comfortably at home: for example, SMP treated fuel containers indicate significantly reduced rates of air exchange and evaporation from the tanks – and in the heating room of your home this permeation barrier prevents the occurrence of annoying odours.

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Contract work at your request.
SCHÜTZ has a state-of-the-art, completely equipped, SMP application plant at its disposal to treat transport and storage containers. We also offer fluorination services exclusively for our customers: in this way, containers made from HDPE, LDPE or PP provide safe and environment-friendly packaging for all kinds of hazardous substances. The permeation barrier will be adapted to your individual requirements.

The perfect solution for difficult filling goods.
SMP fluorination is perfectly suited for all plastic containers that are used for transporting or storing soluble, aromatic filling goods and aromatic substances. SMP treated packaging is used mainly in the chemical industry, the automobile sector as well as in transport services, for example as:

- Gasoline and fuel oil tanks
- Containers for transporting sensitive substances
- Containers for chemicals
SCHÜTZ HEATING OIL TANK SYSTEMS

SCHÜTZ ECODRUM PE

SCHÜTZ ECOBULK
AMERICAS

Headquarters USA
SCHÜTZ Container Systems, Inc.
200 Aspen Hill Road
US-North Branch, New Jersey 08876
Phone (+1) 908 - 526 - 6161

SCHÜTZ Container Systems, Inc.
1224 Bankhead Hwy
US-Winder, Georgia 30680
Phone (+1) 770 - 447 - 5287

SCHÜTZ Container Systems, Inc.
2375 Reeves Road
US-Perrysburg, Ohio 43551
Phone (+1) 419 - 872 - 2477

SCHÜTZ Container Systems, Inc.
5000 Underwood
US-Pasadena, Texas 77507
Phone (+1) 770 - 447 - 5200

SCHÜTZ Container Systems, Inc.
2105 South Wilkinson Way
US-Lexington, North Carolina 27293
Phone (+1) 336 - 249 - 6816

SCHÜTZ Container Systems, Inc.
138 Walser Road
US-Fontana, California 92337
Phone (+1) 951 - 360 - 0260

SCHÜTZ Container Systems, Inc.
1392 A. Dukeries Ind. Est. GB-Workshops, Notts. S81 7BE
Phone (+44) 1909 - 47 88 63

EMEA

SCHÜTZ Ibérica, S.L.
Autovía A7, km 1148.4
Polígono Cami Mas de Ramon
ES-43480 Vila-seca (Tarragona)
Phone (+34) 902 - 16 06 93

SCHÜTZ Ibérica, S.L.
Calle Alonso Barba, 16
Parque empresarial La Garena
ES-28801 Alcalá de Henares (Madrid)
Phone (+34) 902 - 16 06 93

SCHÜTZ France SASU
Chemin du Genet Gayet
FR-91460 Marcoussis
Phone (+33) 1 - 69 80 50 00

SCHÜTZ France SASU
9 rue Bénévent
ZI du Technopole
FR-42000 Saint-Étienne
Phone (+33) 4 - 77 10 16 00

SCHÜTZ (UK) Ltd.
Claylands Industrial Estates, Ind. Est. GB-Workshops, Notts. S81 7BE
Phone (+44) 1909 - 47 88 63

SCHÜTZ (Ireland) Ltd.
Killala Business Park
Townmore
IE-Killala, Co. Mayo, F26XY18
Phone (+353) 96 330 44

SCHÜTZ (Italia) s.r.l.
Via San Zenone 1, 185
IT-25020 Dello (BS)
Phone (+39) 030 - 9 77 16 11

SCHÜTZ (Benelux) S.A.
Westelijke Randweg 23
Haven 0413
IE-Killala, Co. Mayo, F26XY18
Phone (+353) 96 330 44

SCHÜTZ Nordic AS
Norvald Strandvei 131
NO-2212 Kongsvinger
Phone (+47) 62 82 27 50

SCHÜTZ Allemalsberg AB
Lagervägen 4
SE-138 50 Jordbro
Phone (+46) 8 - 009 128 08

SCHÜTZ Polska Sp. z o.o.
Ul. M. Jana Pawła II 52
PL-44-240 Żory
Phone (+48) 13 723 32 50

SCHÜTZ Singapore Pte. Ltd.
315 North Bridge Road 4-14
CIT Tower
Singapore 179070
Phone (+65) 6456 0115

SCHÜTZ (Thailand) Ltd.
Hemaraj Eastern Seaboard Industrial Estate
50076, Moo 2, Tambol Tasi
KH-Amphur Phuakdaeng
Rayong, 21140
Phone (+66) 33 069 911 up to 5

PT. SCHÜTZ Container Systems Indonesia
Jl. Malang Vill Lot R-4
Kawasan Industri Kiik
Margaay, Telukjambe Barat
ID-Karawang 13416
Phone (+62) 21 2961 8080

SCHÜTZ Australia Pty Ltd.
1392 A. Dukeries Ind. Est. GB-Workshops, Notts. S81 7BE
Phone (+61) 3 9360 9291

SCHÜTZ (Australia) Pty Ltd.
152 Cockburn Road
AU-North Coogee WA 6163
Phone (+61) 3 9360 9291

SCHÜTZ Australia Pty Ltd.
23 Arthur Dixon Court
AU-Yatala QLD 4207
Phone (+61) 3 9360 9291

SCHÜTZ Container Systems Co., Ltd.
Jillyang-eup
KR-712-832
Phone (+82) 2 735 7575

SCHÜTZ (Malaysia) Sdn Bhd
No. 11 Yoke Road
BJ-National Ecological Industrial Park
Rayong, 21140
Phone (+66) 33 069 911 up to 5

ASIA-PACIFIC

SCHÜTZ Container Systems (Shanghai) Co., Ltd.
No. 100 Pu Gong Road
Shanghai Chemical Industry Park
CN-Shanghai 201507
Phone (+86) 21 - 671 207 77

SCHÜTZ Container Systems (Tianjin) Co., Ltd.
No. 11 Salida Century Avenue
Xiqing Economic Development Area
CN-Tianjin 300385
Phone (+86) 22 - 58 33 51 08

SCHÜTZ Container Systems (Foshan) Co., Ltd.
No.13 Yihe Road
Nanhai National Ecological Industrial Park
CN-Foshan 528216
Phone (+86) 757-85 41 96 97

SCHÜTZ Container Systems Co., Ltd.
Industrias Termoplásticas
Colonia Cartagena Parque Industrial Tultitlán, Estadío de México
MX-C.P. 54918
Phone (+52) 55 5888 - 0875

SCHÜTZ Container Systems Co., Ltd.
Baja California-Norte
Mexico
MX-22010 Tijuana (Tijuana)
Phone (+52) 663 - 617 1222

Industrias Termoplásticas
Argentina S.A.
Ruta 5 Km. 75
AR-86706 – Jureguí (Buenos Aires)
Phone (+54) 2323 - 497 - 596