HYDROSEAL HY
Phthalate-free plasticizer for hybrid sealants and adhesives

Standard formulations of SMP* sealants contain phthalates, some of which are now banned. In response to this issue, TotalEnergies Fluids have developed HYDROSEAL HY, a high-performance phthalate-free plasticizer specially designed for manufacturers in search of uncompromising efficiency and purity.

Multi-purpose and suited to wide-ranging applications

HYDROSEAL HY is specifically adapted to SMP sealants and adhesives for floor coverings and to sealants used in construction, such as panel bonding, waterproofing, insulation, etc., for both professional and DIY use.

Risk-free interior use

- High flash point: above 165°C
- Low viscosity: 6.20 mm²/s at 40°C
- No VOC** as per EU Directive 1999/13
- Clear, SAYBOLT color >+15
- Odor-free
- Density: 860 kg/m³

Phthalate-free and low VOC emissions

HYDROSEAL HY does not contain phthalates and can be used in the formulation of low-VOC sealants and adhesives meeting the most stringent environmental standards such as GEV Emicode EC1 PLUS.

HYDROSEAL HY is a Class B bio-sourced plasticizer (> 50% of biogenic compounds).

Adapted to many formulations

HYDROSEAL HY has been successfully tested with various types of hybrid formulas:

- MS (Modified silicone)
- ST-PE (Silyl Terminated Polyether)
- ST-PU (Silane Terminated Polyurethane)

It can be used alone or mixed with other plasticizers.

VOC EMISSIONS IN A REFERENCE SMP SEALANT WITH HYDROSEAL HY (17%)

Parameter	VOC concentration in the sealant - (µg/m³)	GEV EC 1+ (µg/m³)
TVOC 3 days	82	≤ 750
TVOC 28 days	< 5	≤ 60

TotalEnergies

*SMP (Silane/Silyl Modified Polymers) **Volatile Organic Compound

Recognized performances

The efficiency of **HYDROSEAL HY** has been compared with a conventional plasticizer containing phthalates (DIDP) in an SMP sealant. The results show equivalent or even superior performances with a better HSE profile.

- Better elastic recovery > 70% (minimum value for construction sealants under ISO 11600)
- Easy to use thanks to improved insertion properties and extrusion rates
- Does not stain wood
- No impact on the setting process or bonding on concrete, aluminum or wood

MECHANICAL PROPERTIES OF THE REFERENCE SMP SEALANT WITH 17% PLASTICIZER (DIDP OR HYDROSEAL HY)

CHARACTERISTIC	METHOD	REFERENCE WITH DIDP	NEW FORMULA WITH HYDROSEAL HY
Shore A after 28 d @RT	DIN ISO 7619	28	28
Strength at 100% (2mm film) 3 d / 28 d [N/mm²]	DIN 53504. S2	0.44 / 0.46	0.33 / 0.40
Strength at elongation at break (2mm film) 3 d / 28 d [N/mm²]	DIN 53504. S2	1.13 / 1.16	0.92 / 1.10
Elongation at break 3 d / 28 d [%]	DIN 53504. S2	1150 / 1150	1050 / 1000
Shear strength (oak/oak) EN 281 after 3 d [N/mm²]	DIN EN 14293	0.795	0.717
Shear strength (oak/oak) EN 281 after 3 d [mm]	DIN EN 14293	1.8	1.3
Strength at 100% (Concrete A-Storage) RT [N/mm²]	DIN 52455-1	0.536	0.527
Strength at 100% (Alu A-Storage) RT [N/mm²]	DIN 52455-1	0.518	0.494
Strength at 100% (Concrete B-Storage) RT [N/mm²]	DIN 52455-1	0.461	0.461
Strength at 100% (Alu B-Storage) RT [N/mm²]	DIN 52455-1	0.511	0.474
Elastic recovery RT [%]	DIN EN ISO 7389-B	64	78