



High-Performance Plastics for Oil & Gas applications

Resins & Molding Compounds for Oil & Gas Industry





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SBHPP a solution provider to the Oil & Gas industry

Our materials enhance innovations

SBHPP proves everyday its strength as development partner with high-performance polymers and a highly capable and motivated team.

In Oil & Gas industry, our materials are providing innovation, high performance, reliability and cost efficiency. SBHPP has always serviced the O&G industry with resins, Durez General Purpose compounds and Short Glass Fiber Phenolic molding compounds.

After extensive market research and significant R&D development, SBHPP has completed development of long fiber phenolic molding compounds to complement and complete its glass fiber phenolic product line.



Onshore and Well Operations

Well Construction and Well Completion

Cement additives

Cementing is one of the most critical steps in the drilling and completion of oil or gas wells. Our resins are used as additive to cement or even as a cement-alternative to provide adhesion, chemical resistance and mechanical properties to the cement blends.

Cementing Tool Components, Downhole Tools/Frac & Bridge Plug Components

SBHPP composites solutions offer advantage in O&G industry. They have an excellent compressive and flexural strength-modulus and a high surface hardness. Phenolics offer adequate chemical resistance making them ideal for downhole, higher temperature applications. They have an excellent creep resistance, dimensional stability and physical property retention at elevated operating temperatures up to 230°C (450°F).

The use of composites offer improved well efficiency and reduced drilling downtime compared to metal solutions. Composites are easily drilled and do not coat/clog drill bits like metal. Drill bit life is also significantly longer due to reduced wear and buildup. Well drill out time significantly reduced versus metal cores/plugs – typically ~75% lower than metal drill out times.

Typical applications are:

- Cement Plugs,
- Wiper Plugs,
- Plunger Assemblies,
- Flapper Assemblies,
- Load Rings,
- Cones, Slips,
- Frac Balls.



Proppants

Frac sand

A proppant is typically a treated sand designed to keep an induced hydraulic fracture open during or following a fracturing operation. It is added to a fracturing fluid that is intended to fill the fissures. The resin-coated sand keeps the fissure from collapsing on release of the hydraulic pressure.

Proppants coated with SBHPP resins continually broaden the oil & gas boundaries. We are developing new products that optimize hydraulic fracturing treatments by increasing fracture flow capacity and enhancing hydrocarbon recovery.

Pipe

Pipe coating

SBHPP resin systems offer various Corrosion Protection Solutions with several pipe coatings for both internal and external use. SBHPP solutions extend the life of drill pipe, coiled tubing, and treating stings.



Typical property example

PROPPANT RESINS FOR SAND AND CERAMIC COATINGS

Grade	Type	Applications	Melting point	Viscosity cP (mPa·s)	Advantage
DUREZ 34357	Pastille Novolac	Foundry, Proppant coating	97 °C	1,500	Good frac fluid compatibility, for both cured and curable proppant.
DUREZ 34358	Pastille Novolac	Foundry, Proppant coating	97 °C	1,500	High conductivity, good frac fluid compatibility, for both cured and curable proppant.
DUREZ 34369	Pastille Novolac	Foundry, Proppant coating	99 °C	2,000	Good frac fluid compatibility, for both cured and curable proppant.

Grade	Type	Applications	Solids	Viscosity cP (mPa·s)	Advantage
DUREZ 33681	Water-based phenolic	Light weight proppant	74%	950	Low free monomer, environmentally friendly
DUREZ 33682	Furan-based resin	In-situ curing with added catalyst	64%	1,200	Renewable resource

RESINS FOR PIPE COATINGS

Grade	Type	Applications	Melting point	Viscosity cP (mPa·s)	Advantage
METHYLON 75108	Liquid Phenolic	Liquid pipe coating		3,000	98% reactive solids liquid. Outstanding resistance to petroleum, acids, bases.
VARCUM 29115	Solid One-Step Phenolic	Intermediate for powder coatings of oil & gas pipe	87 °C	N/A	It gives chemical and temperature resistance to powder-coating formulas.
VARCUM 29100	Solid One-Step Phenolic	Intermediate for powder coatings of oil & gas pipe	75 °C	N/A	Cresol based lump resin for improved chemical and heat resistance.
DUREZ 34450	Solid One-Step Phenolic	Intermediate for powder coatings of oil & gas pipe	75 °C	N/A	Cresol based lump resin modified allyl-ethers for exceptional chemical and heat resistance.
DUREZ 34379	Novolac	Intermediate for powder coatings of oil & gas pipe	120 °C	N/A	Cresol based flake resin for chemical and heat resistance

MOLDING COMPOUNDS FOR TOOL COMPONENTS | General Purpose and Short Fiber Compounds

Items	Unit	DUREZ 118	DUREZ 23570	DUREZ 32633	RX 790	VYNCOLIT X613
Resin		Phenolic	Phenolic	Phenolic	Phenolic	Phenolic
Main reinforcement			Short Glass Fiber	Short Glass Fiber	Short Glass Fiber	Short Glass Fiber
Applications		Cement plug cores, lower performance frac balls.	Medium performance down hole tool components & frac balls, cement plug cores, cones, plunger/cage assemblies.			Hollow components, buoyancy systems.
Advantages		Phenolic benefits at lowest cost	Improved mechanical properties			
Density	g/cm ³	1.40	1.77	1.78	1.73	1.6
Tensile Modulus	GPa	9.6	17.2	18.6		13
Tensile strength	MPa	48	103	138	105	100
Flexural modulus	GPa				16	12
Flexural strength	MPa	69	172	227	215	190
Compressive strength	MPa	207	262	276	380	260
Impact resistance	Izod J/m Charpy kJ/m ²	17 -	27 -	40 -	54 -	- 12.5
Alternative		DUREZ 152	RX 611, VYNCOLIT X611	RX 630	VYNCOLIT X6952	VYNCOLIT X680

Properties determined with injection molded test specimens.

For appropriate choice of material, please consult your local representative.



Offshore Operations

Platform Equipment

Fire and Explosion-proof Components

The prevention of fire and explosion along with the protection from blasts and fire on offshore working environments is one of the major safety regulations. The light weight and strength of our Long Fiber Phenolic Molding Compounds, combined their FST properties (Fire, Smoke and Toxicity), blast, impact, water and corrosion resistance properties make the Long Fiber Composites components the ideal choice for fire protection on oil rigs and offshore platforms and also in potentially hazardous land-based environments.

Deep Water Equipment

Buoys

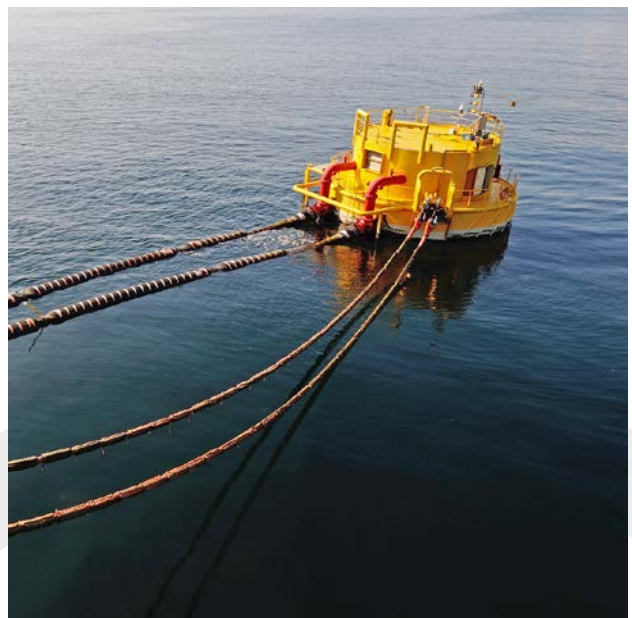
Thermoset Short and long Fiber Composite compounds are particularly suitable for the production of hollow components used in deep water buoys. They have an excellent compression resistance combined with a high creep resistance on loads and over long term. They can resist to very high pressure without corrosion.

Subsea Systems & ROV (Remotely Operated Vehicle)

Subsea Systems are wellheads which sit on the sea floor and extract oil straight from the ground. They require safety semi-structural components that should resist to this very severe environment.

ROVs (remotely operated vehicles) require for their construction, materials that do not corrode in the marine environment, and do not contribute significantly to the weight of the structures.

SBHPP short and long fiber composite compounds offer an efficient alternative to conventional materials.



Typical property example

HIGH PERFORMANCE LONG FIBER COMPOSITE COMPOUNDS

Items	Unit	POROPHEN GF 8202 L24	POROPHEN GF 8205 L24	EM 7302	POROPHEN CF 9040 L24	KINEL SK4502 S8*
Resin		Phenolic	Phenolic	Epoxy	Phenolic	BMI
Main reinforcement		Long Glass Fiber	Long Glass Fiber	Long Glass Fiber	Long Carbon Fiber	Long Carbon Fiber
Applications		Higher performance down hole tool components & frac balls, cement plug cores, cones, plunger/cage assemblies			HT/HP components, sub-sea components	
Advantages		High strength, High impact			High temperature, High strength, High stiffness	
Density	g/cm ³	1.80	1.75	1.85	1.49	1.52
Tensile modulus	GPa					44
Tensile strength	MPa	124	138	138	120	165
Flexural modulus	GPa	24	26	24	39	32
Flexural strength	MPa	325	414	345	420	353
Compressive strength	MPa	350	350	255	350	176
Impact resistance	Izod J/m Charpy kJ/m ²	1350 -	2540 -	1600 -	1600 -	
Alternative		POROPHEN GF 8202 L12	POROPHEN GF 8205 L12	NEONIT SK80 L8G	POROPHEN CF 9040 L12	

Properties determined with compression molded test specimens.

(*) Preliminary data

For appropriate choice of material, please consult your local representative.



Transportation

Pipeline

Pipeline Corrosion Protection

SBHPP resin systems offer various Corrosion Protection Solutions with several pipe coatings for both internal and external use. SBHPP solutions extend the life of metal transportation pipelines.

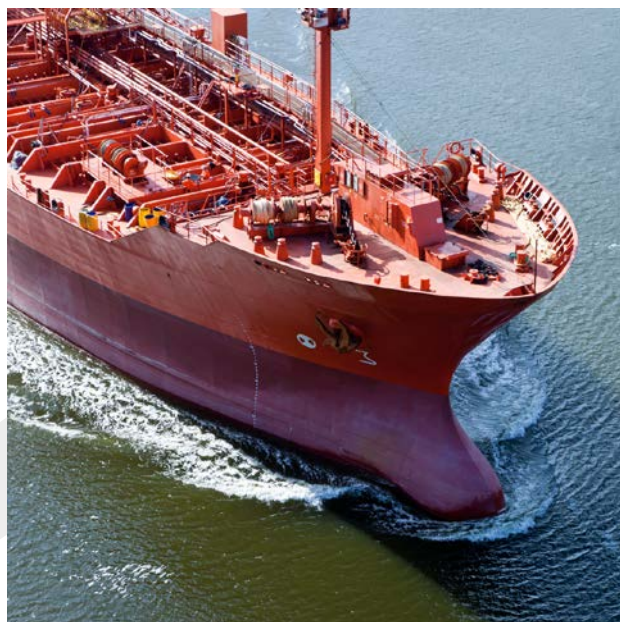
Tankers, Trucks and Storage

Phenolic insulation foam for LNG tank

SBHPP has developed specific phenolic novolac foam for panel insulation systems on cargo tank of LNG carrier. Phenolic resin foams are particularly used on spherical "MOSS Type" systems where they provide high insulation performance under very low temperature conditions (cryogenic).

Vessel, Truck and Storage tanks - corrosion protection

Thanks to decade of knowledge in coating protection, SBHPP resins offer long-lasting protection systems.



Typical property example

RESINS FOR PIPE COATINGS

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PHENOLIC FOAM INSULATION

Grade	Type	Color / Appearance	Advantage	Application
SUMILITERESIN PR-HN-20	Novolac	Yellowish Powder	High heat insulation	LNG tank
SUMILITERESIN PR-HR-40	Resol	Dark Brown Liquid	High heat insulation	Pipeline, Housing panel

For appropriate choice of material, please consult your local representative.



Technical Assistance

Please contact your SBHPP representative if technical assistance is desired.

Contact us

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NOTE

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