



Product Data Sheet

Biohesive® 225

General Information

Biohesive® 225 is a translucent single component RTV silicone adhesive traditionally used for bonding and sealing Aquasign® subsea markers to various substrates.

Mechanical Properties

- Adhesion over a wide temperature range (-65°C to 300°C)
- Excellent resistance to natural ageing (UV, weathering and salt mist)
- Dielectric; will not interfere with Cathodic Protection systems or suffer loss of adhesion
- 60 year guarantee which matches the lifespan of our Aquasign® subsea markers*

Biohesive® 225 is especially appropriate for sea-water resistant bonding; forming a water impermeable seal between the base of the marker and the substrate.

Biohesive® 225 is manufactured and supplied in accordance with ISO 9001:2015 certification.

Operational Data

Curing of Biohesive® 225 begins as soon as the product comes into contact with atmospheric humidity. Typical coverage based on 2mm layer is approx 1/3 sqm per cartridge.

Approximate Cure Time at 25°C (2mm Thickness)		
25%	50%	75%
14 Hours	6 Hours	4 Hours

The curing rate also increases with temperature;

Approximate Cure/Skin Time at 50%rH, (2mm Thickness)		
10°C	20°C	30°C
Cure: 12 Hours	Cure: 6-8 Hours	Cure: 6 Hours
Skin: 10-12 mins	Skin: 6-7 mins	Skin: 2-3 mins

The minimum work temperature is 2°C and can be used in damp conditions.



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Technical Data

Before curing;

Characteristic	Test	Value
Appearance	-	Translucent
Curing System	-	Acetoxxy
Consistency	-	Thixotropic
Flowability (mm)	Standard BOEING S 7502, NM 459 (mm)	< 2
Extrusion (g/min)	Standard NM 495 A, 3mm / 3 bars	50
Specific Gravity (25°C)	Standards ISO R 1183, DIN 53479, NM703	1.04
Solids Content	-	100
Flaspoint	-	> 200
Solvent	-	None

After curing;

Characteristic	Test	Value
Shore A Hardness	Standards ISO R 868, DIN 53505, ASTM D 2240, BS 903, Par A7, NFT 46003, NM 471	25
Tensile Strength, mPa	Standards ISO R 37 (H2), DIN 53504, ASTM D 412, BS 903 Part A2, NFT 46002 (H2), NM 470	2.5
Elongation at Break, %	Standards ISO R 37 (H2), DIN 53504, ASTM D 412 BS 903 Part A2, NFT 46002 (H2), NM 470	500
Tear Strength, kN/m	Standards ASTM D 624 specimen A, NM 492	5.4
Lower Temperature Limits °C	Measured using differential calorimetric analysis	-65
Upper limit in use - cont.	on 2mm thick film, 1000 h	+250
Upper limit in use - peak	on 2mm thick film, 72 h	+300
Thermal Conductivity at 30 °C	Standard NF X 10021	0.20
Thermal Conductivity at 150 °C	Standard NF X 10021	0.16
Dielectric Strength, KV/mm	Standards NF C 26225, ASTM D419, IEC 243	19
Dielectric Constant at 1 MHz	Standards NF C 26230, ASTM D150, IEC 250	2.8
Dielectric Dissipation Factor at 1 MHz	Standards NF C 26230, ASTM D150, IEC 250	2x10 ⁻³
Volume Resistivity $\wedge$.cm	Standards NF C 26215, ASTM D257, IEC 93	1x10 ⁻¹⁴

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Resistance to chemicals

Tests carried out on 2 mm thick films, cured for 7 days at room temperature.

Resistance to oils after 70 h immersion in the oil at 150°C

(Standards ISO R 1817, D 471, NMRPS 525)

Oil type	Bulk Swelling (%)	Shore A hardness (points)	Modulus at 100% elongation (MPa)	Tensile strength (MPa)	Elongation at break (%)
Without oil	/	26	0.56	2.4	435
ELF Prestigrade 15 W 40	20	10	0.25	1.4	550
TEXACO 10 W 30	25	7	0.3	1.5	580
ELF Compet. SX 5 W 30	30	7	0.2	1.0	460

Resistance to anti-freeze

Tests carried out after 7 days in boiling RVI anti-freeze

Immersion in boiling RVI anti-freeze	Bulk Swelling (%)	Shore A hardness (points)	Modulus at 100% elongation (MPa)	Tensile strength (MPa)	Elongation at break (%)
Before immersion	0	26	0.58	2,2	435
After 7 days immersion	2.8	23	0.54	2.2	450



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Resistance to chemicals

Tests carried out after 5 000 h immersion at room temperature

Product	Bulk Swelling (%)	Variation in tensile strength (%)	Variation in elongation at break (%)
12% Citric acid	-0.1	-0.3	0
12% Lactic acid	+0.3	+4	+10
2% Hydrochloric acid	-0.1	-8	-8
12°Cl Bleach	-1	-20	-15
25% Caustic soda	-7	-15	-15
25% Sodium carbonate	-0.2	-12	-10
25% Sodium chloride	-0.1	0	0



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Product Application

Download our Biohesive® 225 Installation Procedure / Video on www.aquasign.com.

Storage

For maximum performance and ease of application AQUASIGN recommend storing the Biohesive® 225 cartridges within a chilled environment approx. 10°C prior to use. Whilst application temperature ranges are far higher (approx. 30°C) this will impact the cure / skinning time of the material.

- **Storage Temperature:** Minimum 2°C / Maximum 30°C
- **Shelf-Life:** Maximum 24 months - check expiry details on cartridges prior to use

Biohesive® cartridges can also be re-sealed for future use;

- Keep in the original container
- Ensure the container is kept closed and dry
- Use the re-sealing cap for minimum wastage

Approved Substrate

Material	
Plastic	Nylon®, Acetal® C, Derlin®, Ertacetal®, PVC®, ABS, HDPE, Polycarbonate, Acrylic, Polypropylene
Metal	Stainless Steel, Epoxy Coated Steel
Rubber	Neoprene, Silicone

Health Information

Download our corresponding Material Safety Data Sheet (MSDS) on www.aquasign.com

Packaging

Biohesive® 225 is supplied in 310ml caulking cartridges which can be resealed. Manual caulking guns are also available in our accessory kits.

Availability

Biohesive® 225 is held as a stock item.

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