Barnes **Technical Data Sheet**

Product Name

TINSIL GEL-10
Mouldmaking System & SFX Skins
RTV-2 Silicone Rubber

Product Description

Pourable, condensation-curing, two component silicone rubber that cures at room temperature and features:

- Excellent Flow
- Low Shore A Hardness (approx 10)
- High Tear Strength
- Fantastic extensibility and elasticity
- Accurate detail reproduction.
- Excellent choice for animatronics & special effects skins and parts
- Excellent long term stability of the mechanical properties of the cured rubber
- Suitable for most casting resins, plaster and waxes.
- Excellent for use with Sil-Thix Thickener for brush-up moulding

Typical Applications

Due to the excellent mechanical properties of the cured rubber, TINSIL GEL-10 is especially suitable for reproducing models with very large undercuts in casting resins such as polyurethane, epoxy and polyester. It is the best choice for producing moulds for delicate parts. Other materials such as wax and plaster may be cast without any problems in moulds made from TINSIL GEL-10. Widely used for animatronics, SFX skins and parts, creature suits and simulated skin/flesh. TINSIL GEL-10 can be mixed with Sil-Thix thickener for a brush-on layer.

Physical Properties

Product Data / Cured – with 10% wt catalyst, after 7 days @ 23ºC / 50% relative humidity

Density at 23ºC	[g/cm³]	1.10
Hardness, Shore A		10
Tensile Strength	psi [mPa]	221 [1.52]
Tear Strength, Die B	pli [kN/m]	89 [15.58]
Linear Shrinkage	[%]	0.3
Elongation	%	654
Colour		Translucent

Handling Properties

Processing

With 10% by weight Catalyst	45 [min] Pot life	16 [hr] Demould Time 48 [hr] Total Cure Time

Product Data / Uncured

Mix Ratio	A:B by weight		10:100
Viscosity @ 23ºC		[cP]	10 000

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Master Preparation

- Porous models made of timber or plaster may need to be sealed to prevent penetration of the rubber into the pores of the material/model.
- Although TINSIL GEL-10 has excellent release properties, it is suggested that a light spray of J-Wax or Stoner E324 release is applied to the master prior to pouring the TINSIL GEL-10.
- For multi-piece moulds, TINSIL GEL-10 will bond to itself, ensure a suitable release such as J-Wax or petroleum jelly is applied to the cured silicone surface prior to pouring.
- Some modeling compounds containing sulfur may inhibit the cure of TINSIL GEL-10.
- When in doubt, a small sample pour is always recommended to test for complete curing and proper release.

Mix and Cure

- To ensure a bubble free mould, deaerate the catalysed liquid silicone under vacuum at approx 29-29 inches mercury until the mass of rubber rises and then collapses, then continue for an additional 2 minutes.
- To achieve full hardness in the specified demould time, the mould should be cured at or above 25ºC. Lower temperatures will result in a slower cure, curing below 18ºC is not recommended.
- Condensation cure silicones release alcohol when curing, ensure this has evaporated sufficiently prior to casting some polyurethanes. Certain polyurethanes can be inhibited.
- Exposure to a warm environment and open air is normally adequate, however the mould can be baked at 100ºC for 4 hours to speed the evaporation process.

Cured Moulds

- Release agent is not necessary when casting materials into a silicone mould, however, a fine mist of a suitable release such as J-Wax, E236, E302 or Epoxy Parfilm can be used for prolonging mould life when using resins such as polyester, polyurethane or epoxy. Consult your Barnes Representative for the best choice.

Thickening

- Sil-Thix Silicone Thickener is added to the TINSIL GEL-10 to produce a brush-on consistency.
- Using amounts up to 5% will create a very thick consistency which can be used for vertical surfaces. A test is always recommended to determine the consistency you require.
- When brushing on several layers, wait for the first layer to “gel” but not fully cure, before applying the next layer.
- Delamination can occur if too much time has passed between applications of subsequent layers.
- Do not allow the layer to fully cure before application of the next layer. As a guide a maximum period of 3 hours between layers should be noted (this is a guide and can guide in varying environments).

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1

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