HT 45 TRANSPARENT

RTV2 Silicone Rubber for industrial use.
Bicomponent addition silicone indicated for mould making, jewelry and rapid prototyping.

1. Main Characteristics

HT 45 TRANSPARENT is a transparent, pourable addition curing, two component silicone that vulcanize at room temperature. The hardened rubber has excellent long-term stability of the mechanical characteristics, durability and precision in reproduction.

2. Applications

HT 45 TRANSPARENT is indicated to be used for mould making and jewelry (high mechanical resistance, dimensional stability, precision in reproduction) and for rapid prototyping (for small and very detailed object with thin surfaces, e.g., turbine).

3. Processing

Take the two bicomponent products supplied by Zhermack (base and catalyst) and shake before use in order to homogenize each component prior to mixing.

Weigh an equal amount of catalyst and base (e.g., 100 grams of catalyst and 100 grams of base; within a 5% error range the results will not change). Once the product is weighted in equal quantities, the base and catalyst must be inserted in a recipient and mixed thoroughly. While mixing, it is important to check that no residue remains on the base and sides of the recipient. Mix energetically until the bending is homogeneous. Once the product is thoroughly mixed, it is ready to be casted. It is recommended to pour the silicone from a 30 cm height into the mould.

In the event that the quantity of silicone used is less than what is required, complete the mould by adding the missing quantity of silicone within 24 hours of the hardening of the first layer of silicone. The second layer will attach to the first one without altering the final outcome.

After the ST is complete, the model can be separated from the mould.

4. Important recommendations

- Before handling the product, read the safety data sheet and make sure to get all the information required for safe use.
- The platinum catalyst is contained in the component CATALYST. CATALYST and BASE components may only be used together if they have the same batch number.
- The surfaces with which the material enters in contact must be perfectly clean, free of grease and dry.
- Test the product it in small scale quantity before extending the use in larger scale.
- Before use, homogenization of the two components is recommended to avoid sedimentation.
- Exact proportions 1:1 must be respected to guarantee the final characteristics of the product.

- Vaseline Oil could inhibit the product vulcanization. Make a small test first.
- It is recommended to use vacuum to eliminate any air bubbles.
- If necessary, use compressed air to facilitate this separation. Do not use any tools to force the separation of the model from the mould.
- The working time and setting time are reduced if the temperature exceeds 23°C (e.g., if the temperature is 40°C, the working time and setting time are approximately cut in half). If the temperature is less than 23°C, the working time and setting time increase considerably.
- Close the bottles after use, do not invert the caps or lids between the base and catalyst.

5. Physical and Chemical Characteristics

The figures are only intended as a guide and should not be used in preparing specifications.

Component CATALYST (uncured)

Properties	Specifications	Analytical Method
Color	Translucent	Visual
Density (Metric system, 23°C/ 73°F)	1,11 g/cc	
Density (USA system, 23°C/73°F)	69,30 lb/ft^3	

Component BASE (uncured)

Properties	Specifications	Analytical Method
Color	Translucent	Visual
Density (Metric system, 23°C/ 73°F)	1,11 g/cc	
Density (USA system, 23°C/73°F)	69,30 lb/ft^3	

Base + Catalyst (cured components) *

Properties	Specifications	Analytical Method
Color	Translucent	
Viscosity of pre-catalyzation mixture	8500 cP	Internal Method (Brookfield)
Mixing Ratio	1:1	n.a.
Density (Metric system, 23°C/ 73°F)	1,11 g/cc	
Density (USA system, 23°C/73°F)	69,30 lb/ft^3	
Working time/Pot life (23°C/ 73°F) **	12’	Internal Method (Brookfield)
Setting time (23°C/ 73°F) ***	150’	
Shore A hardness (after 24 hours, 23°C)	43 shA	ASTM D2240

Tensile Strength (Metric System, 23°C)	5,0 N/mm^2	ASTM D412
Tensile Strength (USA System, 23°C)	730 psi	ASTM D412
Elongation at break (23°C)	250 %	ASTM D412
Tear strength Die B (Metric System, 23°C)	15 N/mm	ASTM D624
Tear Die B (USA System, 23°C)	85 ppi	ASTM D624

* Vulcanizate after 24 H at 23°C.

**The working time "WT", also known as "pot life", is the recommended time period for mixing/vacuuming prior to casting. The reported WT shown in the table refers to a standard temperature of 23°C.

***The setting time "ST" is the time necessary for the silicone to harden from the beginning of mixing of the two components. The reported ST shown in the table refers to a standard temperature of 23°C.

Cured Silicone properties are guaranteed within temperatures ranging from a minimum temperature of - 40 °C to a maximum temperature of +200°C.

6. Packaging

Item code (Internal Zhermack code)	Packaging
DT23831	1 kg + 1 kg
DT23832	5 kg + 5 kg
DT23833	25 kg + 25 kg

7. Shelf life and storage conditions

The "Best use before end" date of each batch is shown on the product label.

18 months if stored correctly at a temperature of between 5° - 27°C (41° - 80°F).

8. Notes

The advices provided as oral or written recommendations or through product use demonstrations are based on the Company knowledge.

Use and application of the product by the user are not subjected to Company's monitoring or restrictions, therefore the final responsibility falls on the user.

Storage beyond the date specified on the label does not necessary mean that the product is no longer usable. In this case, however, the properties required for the intended use must be checked out for quality assurance reasons. Please contact your Sales Area Manager for support.

9. References

n.a.