

August, 2022

APM Unocol 943

Description	
System:	1K acrylate modified
Colour:	transparent
Solid bodies:	100% / solvent-free
Viscosity (25°C):	5000 – 7000 mPa*s
Temp. range:	- 40 °C to +130 °C

Specifications	
Directive 2011/65/EC:	RoHS compatible
EC No. 1907/2006:	compliant with REACH
ISO 10993:	complies with -5 and -12

APM Unocol 943 is a single-component, UV-curing acrylate adhesive. APM Unocol 943 cures in a matter of seconds by exposure to ultraviolet light within the range of 365 nm and achieves impact-resistant adhesive bonds with exceptional resistance against extended exposure to moisture or storage in water. Unocol 943 is used for glass, metal and ceramic adhesive bonds, but also has very good adhesive strength on many plastics.

Surface pretreatment / cleaning

The surfaces to be bonded must be dry and free from dust, oil, separating agents and other impurities. The selected type of surface treatment depends on the requirements profile (cleanliness, mechanical strength, ageing resistance). It is best to clean glass surfaces using the aqueous ultrasound cleaning method at raised temperature. Clean metallic surfaces with aqueous cleaners or clean solvents. For these materials and in particular plastics, surface pretreatment using oxygen plasma has proven successful.

Plasma treatment dries the surface and improves wettability. This achieves good adhesion of the adhesive.

Primers are no replacement for surface pretreatment. Adhesion and ageing resistance can also be improved by using primers.

Applying the adhesive

Condition the adhesive container at room temperature after removal from the cooler.

The ideal processing temperature is at between 20 and 28°C.

Normally, the adhesive can be applied from the cartridge using a dosing device.

Properties of cured adhesive

Colour:	transparent
Shore D (25°C):	65
Glass transition temp.	35 °C
Refractive index:	1.5
Linear shrinkage:	1.9%
E-module:	550 MPa
Elongation at break:	190 %
Breaking tensile strength:	23 MPa
Decomposition temperature	200 °C

Adhesive curing

Curing takes place with UV light at between 365 nm and 405 nm. The minimum curing time at 365 nm and 100 MW/cm² is 5 s. In order to completely cure sticky surfaces, 30 s curing at 200 MW/cm² is recommended.

Disposal

The liquid components of the adhesive must be disposed of as hazardous waste in the same way as synthetic resin or paint components. Cured adhesive is disposed of as hazardous waste in the same way as thermosetting plastics depending on local legal requirements or as domestic waste.

Safety instructions

Avoid contact with skin and eyes. When applying the adhesive, always wear gloves and safety goggles. If adhesive comes into contact with the skin, do not use solvents to remove. Instead wash the affected area (hands) with warm water and soap and then dry. Liquid adhesive irritates on contact with the eyes and may lead to permanent eye damage. Before use, please observe the instructions in the safety data sheet.

Storage

1-component adhesive must be stored in the dark at a temperature of between 2 and 18 °C! At this temperature the adhesive has a shelf life of at least 9 months.

The specifications in this data sheet are based on meticulous tests and our previous experience in everyday practice. They are non-binding instructions, in the same way as our application advisories are also non-binding, whether verbal, in writing or by trials since we cannot accept any liability due to the wide variety of possible influences during processing and application. APM Technica AG disclaims all other explicit or implicit warranties, conditions and terms, be they of real or legal nature, including those which refer to usual market quality, their suitability for a particular use, satisfactory quality or observance of third-party trademarks. APM Technica excludes all liability to the extent permitted by law – whether arising from contract, quasi contract or tort (including negligence) – for direct, indirect and consequential damages, punitive damages awarded by court, loss of business of all kinds, loss of information or data or any other financial losses which may result from the sale, installation, maintenance, use, performance, failure or interruption of operation of the product or in connection therewith, even if we were informed of the possibility of occurrence of such damages. Data and other specifications concerning the nature and suitability of our products are non-binding general conditions and specifically represent no guarantee of certain characteristics. We advise you to perform your own adequate tests to determine the suitability of our products for your specific application. The user is himself responsible for defining the suitability of production methods mentioned in the technical data sheet for his purposes and for taking precautionary measures which are suitable to protect assets and persons from any danger which may occur during the handling and usage of these products. In all other cases our General Terms and Conditions of Business shall apply.