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BASF Aktiengesellschaft

# Acronal® TS456

Acronal® TS456 is mainly used to modify hydraulic binders and to manufacture flexible coatings.

## Chemical nature

Aqueous, anionic dispersion of a copolymer of styrene and an acrylic ester, free of plasticizers.

## Properties

### Product specification

Solid content (DIN EN ISO 3251, T, 2-D)	%	57 ± 1
Viscosity at 23°C (ISO 3219), shear rate 250 s <sup>-1</sup>	mPa · s	140–200
PH (ISO 976)		7.0–8.5

The aforementioned data shall constitute the agreed contractual quality of the product at the time of passing of risk. The data are controlled at regular intervals as part of our quality assurance program. Neither the data nor the properties of products specimens shall imply any legally binding guarantee of certain properties or of fitness for a specific purpose. No liability of ours can be derived therefrom.

### Other properties of the dispersion

Apparent viscosity at 23°C (ISO 2555, Brookfield RVT, Spindle 3, 100 rpm)	mPa · s	300–700
Density at 20°C (ISO 8962)	g/cm <sup>3</sup>	approx. 1.04
Average particle size	µm	approx. 0.2
Minimum film-forming temperature (ISO 2115)	°C	< 1
Low-temperature stability		Not resistant to frost

### Film properties

Density at 20°C (ISO 1183, DIN 53479)	g/cm <sup>3</sup>	approx. 1.08
Glass transition temperature T <sub>g</sub> (DSC)	°C	approx. – 6
Elongation at break*	%	> 2500
Tensile strength	N/mm <sup>2</sup>	approx. 1.2
Surface		Tacky
Water absorption after 24 h immersion (ISO 62, DIN 53495)	%	5–10
Appearance		Clear, transparent
Resistance to ageing		Good
Resistance to light		Good

\* This figure was measured according to a method derived from ISO 1184 and DIN 53455. It only allows a rough comparison of the elongation of film to be made.

## Application

Acronal®TS456 is mainly used to modify hydraulic binders, especially cement mixtures. It contains a soft polymer, which enables it to be used in flexible mineral-based products such as sealant compounds, floor screeds, floor sealants, anti-corrosion coatings for reinforcement steel and in concrete repair products. Trials must be performed in advance for each specific application, because the performance of Acronal®TS456 is influenced to a large extent by the type of hydraulic binder involved. Acronal®TS456 can also be employed in flexible two-component adhesive sealants.

## Processing

No plasticizers usually need to be added, because Acronal®TS456 has a low minimum film-forming temperature and a low glass transition temperature, but Plastilit®3060 can be used as a plasticizer in exceptional cases. Please note that adding plasticizers can impair the workability and lower the strength of cementitious products formulated with Acronal®TS456.

It also has to be pointed out that many of the thickeners that are frequently employed in cementitious products formulated with Acronal®TS456 can cause them to stiffen and can interfere in the setting process, and they can have a very detrimental effect on the wet strength of these products after they have set. No ammonia is used in the production of Acronal®TS456, and no unpleasant odour is generated when cementitious products are setting. Every effort should therefore be made to use only ammonia-free products in formulations.

Customers have to carry out their own trials when developing and processing products based on Acronal®TS456. The compatibility and miscibility of Acronal®TS456 with other ingredients of formulations, its effects on the setting of hydraulic binders and its adhesion on different substrates, etc., are affected by a variety of factors which are too numerous for us to take into account in our own trials. This also includes testing the stability of its viscosity when it is stored at temperatures of ca. 50°C.

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## Safety

### General

The usual safety precautions when handling chemicals must be observed. In particular, the place of work must be well ventilated if large quantities are being processed, the skin should be protected, and safety glasses should be worn at all times.

### Safety Data Sheet

A Safety Data Sheet has been compiled for Acronal®TS456 that contains up-to-date information on all questions relevant to safety.

### Labelling

According to all the data at our disposal, Acronal®TS456 does not need to be labelled as a dangerous substance or preparation as defined in the relevant European Union directives (substances directive 1967/548/EC and preparations directive 1999/45/EC) according to their current status.

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## Storage

Acronal®TS456hasashelflifeofsixmonthsat10–30°C,providedthat carefulattentionispaidtothehygieneofstorage facilities.Wewould recommendtreatingAcronal®TS456withabiocideinordertoprevent problemswithmicroorganismsfromoccurring.Furtherdetailsaregivenin ourleafleton“Thehandlingandstorageofpolymer dispersions”.

Thisproductmustnotbeallowedtocomeintocontactwithbareironor copperanditsalloysduringstorage.

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## Note

Theinformationsubmittedinthispublicationisbasedonourcurrentknowledgeand experience.Inviewofthemanymfactors thatmay affectprocessingandapplication, thesedatadonotrelieveprocessors oftheresponsibilityofcarryingouttheir own testsandexperiments;neitherdotheyimplyanylegallybindingassuranceof certainpropertiesorsuitabilityforaspecific purpose.Itistheresponsibilityof thosetowhomwesupplyourproductstoensurethat anyproprietaryrightsand existinglawsandlegislationareobserved.

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