

Fiber Bonding

Technical Data Sheet

Acrodur[®] DS 3515



Chemical Nature

Aqueous dispersion of a styrene-acrylic polymer modified with a polycarboxylic acid and a polyol as crosslinking component.

Properties

Typical Properties

| | | |
|---|-------|-----------|
| Solid Content (DIN EN ISO 3251) | % | 49 – 51 |
| pH (DIN ISO 976 (23 °C)) | | 3.0 – 4.0 |
| Viscosity (DIN EN ISO 3219 (23 °C, 100 1/s)) | mPa s | 300 – 800 |

Applications

Features

Acrodur[®] DS 3515 is employed as a formaldehyde-free binder for wood fibers and bast fibers such as hemp, flax, sisal and jute, etc. It can be used to bond mineral fibers such as glass wool and rock wool and synthetic fibers such as nylon and polyester. It can also be used as binder for cork chips and finely divided inorganic substances such as sand and abrasives.

Processing

Acrodur[®] DS 3515 can be applied at its original concentration or it can be diluted in advance. It can be applied to substrates by spraying, curtain coating or roll coating.

Acrodur[®] DS 3515 crosslinks at a temperature of approximately 130 °C. Production processes can be speeded up by increasing the curing temperature to 180 – 200 °C, because the higher degree of Crosslinking ensures that the substrate has optimum water resistance and heat resistance.

Neutralizing Acrodur[®] DS 3515 with bases such as caustic soda impairs the Crosslinking reaction, especially if the pH is >5.

In order for the maximum possible strength to be obtained, it is recommended that substrates impregnated with Acrodur[®] DS 3515 contain a small amount of residual moisture at the beginning of the curing process when they are cured in a heated press or oven. The ideal moisture content depends on the type of substrate and the type of equipment that is used. Trials need to be performed in order to determine the optimum moisture content and the amount of binder that needs to be applied.

Various additives can be used in combination with Acrodur[®] DS 3515 in order to obtain specific features. For instance, aminosilanes can be added to improve the adhesion of the binder on inorganic fibers. Reactive substances such as polyfunctional epoxy resin, phenolformaldehyde resins, isocyanates or melamine resins can be added to increase the reactivity of the binder at low temperatures. Acrodur[®] DS 3515 can also be mixed with other polymer dispersions in order to modify its mechanical properties and its water absorption, etc.

Additives such as surfactants (e.g., Lumiten[®] I-SC), defoamers and water repellents (e.g., Basophob[®] WDS) can be used to adjust the performance of Acrodur[®] DS 3515

Safety

General

The usual safety precautions when handling chemicals must be observed. These include the measures described in Federal, State and Local health and safety regulations, thorough ventilation of the workplace, good skin care and wearing of protective goggles.

Material Safety Data Sheet

All safety information is provided in the Material Safety Data Sheet Acrodur® DS 3515.

Industrial Hygiene

Acrodur® DS 3515 does not exert any harmful effects provided it is used for the purpose for which it is intended and processed in accordance with current industrial practice. Acrodur® DS 3515 may contain technically unavoidable traces of volatile organic compounds. Observe appropriate workplace exposure limits when indicated in the Material Safety Data Sheet. Acrodur® DS 3515 may irritate the skin and mucous membranes on prolonged contact with the product.

Labeling

Acrodur® DS 3515 is not classified as a hazardous product under DOT or OSHA regulations or as a controlled product under WHMIS (Canada) regulations. It does not contain any hazardous components at levels which have implications for labeling under these regulations.

Storage

Acrodur® DS 3515 has a shelf life of six months from delivery date, provided it is stored in accordance with the "Handling and Storage of polymer dispersions" brochure. Technical information regarding the storage of BASF polymer dispersion products is available upon request.

Important

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