

dielectric

CONSTANTS

million
in one

SIEMENS

Safety Guidelines: Warning notices must be observed to ensure personal safety as well as that of others, and to protect the product and the connected equipment. These warning notices are accompanied by a clarification of the level of caution to be observed.

Qualified Personnel: This device/system may only be set up and operated in conjunction with this manual. Qualified personnel are only authorized to install and operate this equipment in accordance with established safety practices and standards.

Unit Repair and Excluded Liability:

- The user is responsible for all changes and repairs made to the device by the user or the user's agent.
- All new components are to be provided by Siemens Milltronics Process Instruments Inc.
- Restrict repair to faulty components only.
- Do not reuse faulty components.

Warning: This product can only function properly and safely if it is correctly transported, stored, installed, set up, operated, and maintained.

Note: Always use product in accordance with specifications.

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Relative Dielectric Constants

Material	Dielectric Constant (ϵ_r)
Acetal	3.6
Acetoaldehyde	22.2
Acetoanilide, granules	2.8
Acetone	21
Acetyl methyl hexyl ketone	28
Acrylic resin	2.7 to 6
Alcohol	16 to 31
Alumina porcelain	8 to 11
Aluminium carbonate	5.6
Aluminium chlorate	5.1
Aluminium ether	3.1
Aluminium, powder	1.6 to 1.8
Aniline	7.8
Asbestos	3 to 3.5
Ash (flyash)	1.9 to 2.6
Bakelite	4.5 to 5.5
Barley, powder	3.4 to 4.0
Benzene	2.3
Bleaching powder	1.8 to 2.0
Carbite, powder	5.8 to 7.0
Carbon dioxide	1.6
Calcium carbonate	1.8 to 2.0
Cellophane	7 to 7.7
Celluloid	4.1
Cellulose	6.7
Chlorine	2.1
Clay, powder	1.8 to 2.8
Coal	1.2 to 1.8
Coffee, powder	2.4 to 2.6
Coke, powder	1.1 to 2.2
Colophonium	2.5 to 2.6
Corn	2.3 to 2.6
Dolomite	8.8
Epoxy resin	2.5 to 6
Ethyl alcohol	23
Ethylene glycol	37

Material	Dielectric Constant (Er)
Ethyl toluene	2.2
Ferric oleate	2.6
Ferric oxide	1.4 to 1.8
Fluorine resin	2 to 8
Formalin	23
Formic acid	59
Freon	2.2
Glass-epoxy plate	4.5 to 5.2
Glass raw material	2.0 to 2.5
Glass-silicon plate	3.5 to 4.2
Glycerine	47
Glycol	36
Manganese dioxide	5.0 to 5.2
Margarine, liquid	2.8 to 3.2
Melamine resin	4.7 to 10.2
Methanol	33
Methyl acetate	7.3
Methyl salicylate	9
Mica	4.5 to 7.5
Napthalene	2.3 to 2.5
Neoprene	6 to 9
Nylon	4 to 5
Oleic acid	2.5
Oil, mineral	2.2 to 2.4
Oils, petroleum	1.8 to 2.2
Oils, vegetable	2.5 to 3.5
Olefin	3.2
Paraffin	1.9 to 2.5
Phenolic resin	4 to 12
Plaster	2.5 to 6.0
Polyacetal resin	2.6 to 3.7
Polyamide resin	2.5 to 2.6
Polycarbonate resin	2.9 to 3
Polyester resin	2.8 to 4.5
Polyethylene resin	2.2 to 2.6
Polystrene resin	2.2 to 2.6

Rubber, vulcanized	2.0 to 3.5
Rubber, raw	2.1 to 2.7
Sand	3 to 5
Sesame, powder	1.8 to 2.0
Silica sand	2.5 to 3.5
Silicon resin	3.5 to 5
Silicon varnish	2.8 to 3.3
Silicon	2.4
Silicon tetrachloride	2.4
Silk	1.3 to 2.0
Slate	7
Soap, powder	1.2 to 1.5
Sodium carbonate	5.3 to 8.4
Sodium nitrate	5.2
Soybean	1.8 to 2.0
Steatite	5.3 to 6.8
Styrol resin	2.4
Sugar	3
Sulfur monoxide	4.8
Sulfur, powder	1.5 to 1.8
Teflon	2
Trichloethylene	3.4
Urea	3.5
Urethane	6.5 to 7.1
Water, 20C	80
Water, 100C	48
Wheat, powder	2.5 to 3

Notes:

1. Unless otherwise stated the dielectric values are for materials at 20C
2. For materials not mentioned please consult the material supplier or chemistry handbook for relative dielectric values
3. The information provided above is for reference only, please consult the material supplier for precise relative dielectric values.

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