



CORROSION RESISTANCE GUIDE FOR ZOOK IMPERVIOUS GRAPHITE RUPTURE DISKS

ZOOK Enterprises provides the following corrosion resistance information to be used when specifying ZOOK Graphite Rupture Disks.

This simplified guide offers compatibility with common corrosives. Where there is doubt about compatibility, a sample of ZOOK Enterprises graphite will be supplied on request for your on-site evaluation. Please contact the factory if you have any questions.. For descriptions of DUPLEX and other product-related information, consult the ZOOK Product Catalog or web site at www.zook.cc

INTERCHANGING WITH OTHER MANUFACTURE'S PRODUCT

ZOOK's manufacturing process utilizes synthetic graphite impregnated with a particular resin utilizing a proprietary process; therefore, it is not a safe assumption that different brands of graphite rupture disks are equal and interchangeable.

A graphite disk produced by ZOOK Enterprises should not be substituted for another manufacturer's similar product for the following reasons:

- Each manufacturer uses a different grade of graphite. Each grade contains different percentages of voids or pores in the material.
- These voids must be filled in order to make the disk impervious (leak tight). ZOOK is unique in that we use a phenolic resin to fill the pores.
- The impregnant used to fill the voids is different among each manufacturer. Some manufacturers use resins other than phenolic types or they use a "proprietary processes" which have only been used in recent years as impregnates.
- Depending upon the resin used and the application, a ZOOK disk will function properly without leakage or premature rupture where another manufacturer's product may deteriorate, leak, or cause it to rupture. One example of where a ZOOK disk is superior, is with a Furan impregnated disk in an acidic application.

NOTES

- The resin ZOOK uses has been in use in the chemical processing and related industries for over 60 years. The performance over those 60 years gives us the confidence to use our disks in the applications that we recommend.
- The phenolic resin used in ZOOK graphite disk is environmentally safe and is in compliance with FDA. Consult the factory for appropriate disk styles.

PROLONGED APPLICATION LIFE

- If prolonged application life is a goal, we suggest the following product enhancement:

Each disk should be **ARMORED** - Armor consists of a steel (carbon or stainless) ring surrounding the graphite portion of the disk. It allows for uneven pipe stresses to exist and not affect disk burst performance. It also greatly reduces the possibility for improper installation due to uneven torquing of flange bolts and prevents possible rim fracture at time of blowdown. It is required in toxic and primary fire service and high burst ratings. Armor is strongly suggested in very low burst ratings.

CAUTION

Any information contained in this guide pertains exclusively to ZOOK Graphite Rupture Disks and cannot be applied to any similar product produced by other manufacturers. ZOOK Graphite Rupture Disks possess unique qualities and characteristics that offer long application life and superior resistance to cycling (fatigue) and corrosion.



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How to use this guide:

All of the listed media are compatible with ZOOK Enterprises' proprietary Graphite / Resin combination, except those noted in **BOLD FACE** type. For those media's noted in bold face, use the following table on notations to determine compatibility:

D = Specify Duplex Style disk with PTFE liner

F = " " " " " F.E.P. Liner

X = ZOOK Disks are not compatible

Aetaldehyd	Anthraquinone	Carbon Disulfide	Dichlorophenoxyacetic Acid
Acetanilid	Arsenic Acid	Carbon Monoxide	Diesel Fuels
Acetamide	Arsenic Trichloride	Carbon Tetrachloride	Diethyl Cellosolve
Acetic Acid	Asprin	Carbonic Acid	Diethyl Ether
Acetic Anhydride	Aststine-D	Carboxymethyl Cellulose	Diglycolic Acid
Acetone		Carminic Acid	Dioxane 1,4
Acetyl Chloride	Beer	Castor Oil -D	Diphenylamine
Acetylene	Beer Sugar Liquors	Caustic Potash-D	Dowtherm
Acrylonitrile	Benzaldehyde	Caustic Soda-D	
Adipic Acid	Benzene	Cellulose Acetate	Epson Salts
Air	Benzene Hexachloride	Cesium	Ethanplamine
Alkyl Aryl Sulfonaic	Benzenesulfonic Acid	Chlorethylbenzene	Ethers
Alkyl Aryl Sulfonate	Benzoic Acid	Chloral - F	Ethylene
Allyl Alcohol	Beta-Naphthol	Chlorine Gas-D	Ethyl Acetate
Alum	Black Liquor	Chlorine Trifluoride-F	Ethyl Alcohol
Alum. Ammonium	Borax	Chlorine Water-D	Ethyl Chloride
Alum. Chrome	Boric Acid	Chloroacetic Acid	Ethylene Chlorohydrin
Alum. Potassium	Brine (acid)	Chlorobenzene - F	Ethylenediamine
Aluminum Chloride	Bromine-F	Chlorobutadiene	Ethylene Dibromide
Aluminum Fluoride	Bromine (water)-F	Chloroform-F	Ethylene Dichloride
Aluminum Hydroxide-D	Butadiene	Chlorodrene	Ethylene Glycol
Aluminum Nitrate	Butane	Chlorosulfonic Acid	Ethylene Oxide
Aluminum Sulfate	Butyl Acetate	Chromic Acid-D	
Ammonia (gas)	Butyl Alcohol	Citric Acid	Fatty Acids
Ammonia (gas-dry)	Butylene	Coconut Oil	Ferric Chloride
Ammonia (Aqua)	Butyraldehyde	Copper Carbonate	Ferric Nitrate
Ammonium Acetate	Butyric Acid	Copper Chloride	Ferric Sulfate
Ammonium Carbonate		Copper Cyanide	Ferrous Chloride
Ammonium Chloride	Calcium Bisulfide	Copper Fluoride	Ferrous Nitrate
Ammonium Fluoride	Calcium Bisulfite	Copper Nitrate	Ferrous Sulfate
Ammonium Hydroxide	Calcium Carbonate	Copper Sulfate	Fluorine-X
Ammonium Metaphosphate	Calcium Chlorate-D	Cottonseed Oil	Formaldehyde
Ammonium Nitrate	Calcium Chloride	Cresol	Formic Acid
Ammonium Persulfate	Calcium Hydroxide-D	Crotonaldehyde	Francium-D
Ammonium Phosphate	Calcium Hypochlorite-D	Crude Oil	Freon F22 (gas)
Ammonium Sulfate	Calcium Nitrate	Cylohexane	Freon F22 (liquid)
Ammonium Sulfide	Calcium Oxide		Fructose
Ammonium Thiocyanate	Calcium Phosphate	Dextrose	Fruit Juices, Pulp
Amyl Acetate	Calcium Sulfate	Dialkyl Phthalates	Furfural
Amyl Alcohol	Caprylic Acid	Diazo Salts	
Aniline	Carbon Dioxide (dry)	Dichlorodifluoromethane	Gas-Manufactured
Aniline Hydrochloride	Carbon Dioxide (wet)	Dichlorodiphenyl-trichloromethane	Gas Natural

Disclaimer

The information in this chart should only be used as a general guide to the selection of the suitable material. Variations in the chemical behavior could be different due to factors such as temperature, pressure, concentration or mixture of chemicals.

While utmost care was used in compiling this chart, we assume no responsibility for it's accuracy and completeness. Specifications are subject to change without notice.



ZOOK®...rupture disks and related over-pressure protection products

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Gasoline (leaded)	Maleic Acid	Petrolatum	Pyridine
Gasoline (unleaded)	Maleic Anhydride	Petroleum Oil	
Gin	Manganese Sulfate	Phenol	Rubidium (Liquid)-D
Glucose	Mercurous Nitrate	Phenylhydrazine	
		Hydrochloride	
Glycerin	Mercury	Phosphoric Acid	Salicylaldehyde
	Methyl Alcohol	Phosphorus Oxychloride	Salicylic Acid
Heptane	Methyl Bromide	Phosphorus Pentoxide	Sea Water
Hexamethylenetetramine	Methyl Cellosolve	Phosphorus-Red	Silver Cyanide
Hexane	Methyl Chloride	Phosphorus Trichloride	Silver Nitrate
Hexanol-Tertiary	Methyl Chloroform	Phosphorus-Yellow	Soap Soluton
Hydrazine	Methyl Ethyl Ketone	Photographic Solutions	Soaps
Hydrobromic Acid	Methyl Isobutyl Ketone	Phthalic Anhydride	Sodium
Hydrochloric Acid	Methyl Salicylate	Plating Solutions-Brass	Sodium Acetate
Hydrocyanic Acid	Methylene Chloride		Sodium Benzoate
Hydrofluoric Acid-D	Mineral Oil		Sodium Bicarbonate
Hydrofluosilicic Acid	Molasses	-Cadium	Sodium Bromide
Hydrogen	Monochloroacetic Acid	-Chromium	Sodium Carbonate
Hydrogen Bromide	Monochloro Benzene	-Copper	Sodium Chloride
Hydrogen Cyanide	Monochanolaminee	-Gold	Sodium Chlorate-D
Hydrogen Peroxide-D	Monoethanolaminee	-Lead	Sodium Chlorite
Hydrogen Sulfide-Dry	Monosoldium Glutamate	-Nickel	Sodium Chlorite
Hydrogen Sulfide-Wet	Muriatic Acid	-Rhodium	Sodium Chromate
Aqueous Solution		-Silver	Sodium Chromate
Hydroquinone		-Tin	Sodium Cyanide
Hypo (Sodium Thiosulfate)		-Zinc	Sofium Dichromate
	Naphtha		Sodium Ferricyanide
	Nickel Chloride	Polyethylene	Sodium Fluoride
	Nickel Sulfate	Potassium (Liquid)-D	Sodium Hydroxide-D
	Nicotinic Acid	Potassium Aluminum Sulfate	Sodium Hypochlorite-D
Iodine-F	Nitric Acid-D	Potassium Bicarbonate	Sodium Iodide
Isopropyl Alcohol	Nitrobenzene	Potassium Borate	Sodium Nitrate
Isopropyl Acetate	Nitroparaffin	Potassium Bromate	Sodium Phosphate
Isopropyl Ether	Nitrous Acid-D	Potassium Bromide	Sodium Silicate
	Nitrous Oxide-D	Potassium Carbonate	Sodium Sulfate
		Potassium Chlorate-D	Sodium Sulfite
Kerosene		Potassium Chloride	Sodium Thiosulfate
Ketones		Potassium Chromate	Sorbitol
	Octyl Alcohol	Potassium Cyanide	Stannic Chloride
Lactic Acid	Oils	Potassium Dichromate	Steam
Lard Oil	Oleic Acid	Potassium Ferricyanide	Stearic Acid
Lead Acetate	Oleum-D	Potassium Ferrocyanide	Sour Crude Oil
Lemon Oil	Oxalic Acid	Potassium Fluoride	Styrene
Lime	Oxygen	Potassium Hydroxide-D	Sulfonated Detergen
Linoleic Acid	Ozone	Potassium Hypochlorite-D	Sulfur
Linseed Oil		Potassium Nitrate	Sulfur Dioxide
Litharge	Palmitic Acid	Potassium Perborate	Sulfuric Acid-D
Lithium-D	Paradichlorobenzene	Potassium Perchlorate	Sulfurous Acid-D
Lubricating Oil	Paraldehyde	Potassium Permanganate	Sulfur Trioxide(Oleum)-D
	Penicillin	Potassium Persulfate-D	
Magnesium Hydroxide	Pentacrythritol	Potassium Sulfate	
Magnesium Sulfate	Perchloric Acid	Propane	
	Perchloroethylene		

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Tannic Acid
Tannic Chloride
Tanning Liquors
Tartaric Acid
Tetrachlorethane
Tetraethyl Lead
Tetramine C
Thread-cutting Oils
Titanium Dioxide
Toluene
Toluene Diisocyanate
Tomato Juice
Toxaphene
Trichlorethylene
Trichloroacetic Acid
Tricresyl Phosphate
Triethanolamine
Triethylamine
Trisodium Phosphate
Turpentine

Urea
Urine

Vanillin
Vegetable Oil
Vinegar
Vinyl Acetate
Vinyl Chloride

Water-Demineralized
Water-Distilled
Water-Salt
Whiskey
Wine

Xylene

Zinc Ammonium Chloride
Zinc Chloride
Zinc Nitrate
Zinc Oxide
Zinc Sulfate

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