Standard emergency eyewash and shower equipment is constructed from a variety of materials, including stainless steel (shower pull rods and actuating arms), chrome plated brass (valves and eyewash components) and galvanized steel (pipe and fittings). In addition, standard units may include plastic components (shower heads, eyewash bowls, spray heads, etc.) that are molded from ABS, polypropylene and/or nylon.

When installed in industrial environments, emergency eyewash and shower equipment is exposed to all of the conditions present in the environment, including temperature, humidity, sunlight and chemicals that may be present. In particular, the equipment can be exposed to acids, caustics and other chemicals that will cause the materials in the equipment to corrode. Such corrosion is a serious matter, since it can cause the equipment to deteriorate to the point of becoming nonfunctional. In an emergency, the equipment may not be available to an injured person. While Guardian carefully selects the materials used in its products, the possibility of corrosion cannot be eliminated.

Guardian offers several alternatives for improving the corrosion resistance of emergency equipment:

- **Powder Coated Finish.** All of our units can be furnished with a powder coated finish applied over the galvanized steel and brass components. The surfaces to be coated are cleaned and etched with phosphoric acid solution. Epoxy powder is electrostatically applied to the metal surfaces and then baked to cure. The result is a smooth, hard surface that provides excellent resistance to corrosion. Guardian powder coating is available in a variety of colors, including high visibility orange, green, yellow and red. These colors provide the equipment with increased visibility in the industrial environment.

- **Polyvinyl Chloride (PVC) Construction.** Guardian offers a wide array of units that are constructed of PVC and PVC-coated materials. All pipe and fittings are PVC. Valves, actuators and other components are brass with a PVC coating. These units can provide better durability than standard emergency equipment in certain environments.

- **Stainless Steel.** Guardian also offers a wide selection of units that are constructed entirely of stainless steel. These units are highly resistant to corrosion, and are ideal for use in areas such as laboratories and clean rooms.

In order to assist in selecting the equipment that is best suited for a particular application, Guardian has compiled a “Corrosion Resistance Guide”. This corrosion information is offered as a guideline only, to assist in selecting the equipment that will be best suited for the user’s application. *Due to the infinite number of combinations of chemicals found in any environment, as well as the effects of chemical concentration, temperature, humidity, etc., Guardian cannot predict and cannot be held responsible for the effects of any particular environment on any specific installation of emergency eyewash and shower equipment.*

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A - Good
B - Fair
C - Poor
D - Not Recommended

Max. Temperature (if avail.)
X¹ - Up to 72° F
X² - Up to 120° F

CHEMICAL	CONCENTRATION	GALVANIZED STEEL	BRASS	EPOXY POWDER COATED (SEE NOTE 2)	STAINLESS STEEL (TYPE 304)	STAINLESS STEEL (TYPE 316)	POLYVINYL CHLORIDE (PVC)
Acetic Acid	80%		D		B	A	A¹
Acetic Acid, Glacial	99.5%		D	B	B	A	B
Acetone			A	C	A	A	D
Ammonium Hydroxide	10%		D	A	A¹	A¹	A²
Amyl Acetate			B	B	A¹	A	D
Amyl Alcohol			A¹		A	A	C
Benzene		A	A	C	B	A	D
Butyl Alcohol			A	B	A	A	A²
Calcium Hypochlorite	30%		D		C¹	B	B¹
Carbon Disulfide			C		A¹	A	D
Carbon Tetrachloride		B	A¹	B	B	A	C
Chloroform			B	A	A	A	D
Chromic Acid	50%		D	B	C	B¹	D
Cresol				D	A²	A	D
Crude Oil			D		A	A	A²
Dioxane			A	D			D
Distilled Water			B		A	A	A²
Ether			B		A	A	D
Ethyl Acetate			B	C	B	A	D
Ethyl Alcohol		A	A	A	A	A	A
Ethyl Ether			B	B	B	B	D
Formaldehyde	35%		A	A	A¹	A	A
Formic Acid			D	C	B¹	A¹	A¹
Gasoline			A	A	A¹	A²	C
Glycerine			B		A²	A	A²
Hydrochloric Acid		D	D		D	B	B
Hydrofluoric Acid			D	A	D	D	B¹
Hydrogen Peroxide			D	A	B²	A²	A²
Isopropyl Alcohol			A		B	B	A¹
Kerosene			A		A	A	B
Lactic Acid			D		B¹	B¹	B¹
Methanol			A	A	A	A	A¹
Methyl Ethyl Ketone			A	C	A	A	D
Methylene Chloride			A	B	B	B	D

(continued on next page)

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CHEMICAL	CONCENTRATION	GALVANIZED STEEL	BRASS	EPOXY POWDER COATED (SEE NOTE 2)	STAINLESS STEEL (TYPE 304)	STAINLESS STEEL (TYPE 316)	POLYVINYL CHLORIDE (PVC)
Mineral Oil			A		A	A	B
Naphthalene				A	A	A	D
Nitric Acid	50%		D	B	A²	A¹	B
Perchloric Acid	70%				C	C	C
Phenol	10%			D	B	B	C
Phosphoric Acid	>40%		D	A	D	C	B
Sea Water		D	D		C	C	A²
Silver Nitrate			D	A	B	B	A¹
Sodium Carbonate			B		A	A	A²
Sodium Chloride		D			B	B	A²
Sodium Hydroxide	50%		D	A	B	B	A²
Sodium Hypochlorite	100%		D		D	D	B
Sodium Sulfide			D	A	B	A	A²
Sulfuric Acid	10-50%		D	A	D	C	A¹
Toluene			A	B	A	A	D
Trichlorethylene			A	C	B	B	D
Turpentine			C		A	A	A
Urea (Saturated)					B	B	D
Xylene			A	B	B	B	D
Zinc Chloride			D	A	B	B	B

Notes:

1. The above table presents the relative corrosion resistant abilities of certain materials in the specific corrosive environments described. This information should be considered as a general guide only. The table does not provide information on possible combinations of concentrations of corrosive media or temperature levels that may be found in the field. Even small changes in the concentration of the corrosive media or in the temperature at which interaction takes place may generate different results from those described above. Results different from those shown above may also result from impurities in the metals or plastics, the actual condition of the environment in which the materials are used, or other factors.

   NO GUARANTEE OF THE PERFORMANCE OF ANY METAL OR PLASTIC DESCRIBED IN THE TABLE IS EXPRESSED OR SHOULD BE INFERRED. GUARDIAN RECOMMENDS THAT MATERIAL SAMPLES BE SUBJECTED TO ACTUAL OPERATING CONDITIONS BEFORE FINAL SPECIFICATION.

2. The corrosion resistance data for powder coating is based upon laboratory testing consisting of subjecting epoxy-coated samples to each chemical for a one-hour period. For non-volatile chemicals, spot tests were conducted by applying five drops of the chemical to the epoxy-coated surface. For volatile chemicals, spot tests were conducted by applying a cotton ball saturated with the chemical to the epoxy-coated surface. Different results may be obtained when epoxy-coated materials are subjected to chemicals for longer periods of time.

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