

## TECHNICAL BULLETIN GENERAL INFORMATION



### CARE & USE OF ACRYLIC

NuAire products manufactured from Acrylic materials require special consideration for the care and use to assure maximum customer satisfaction. Acrylic materials have many favorable characteristics, such as being lightweight, rigid, durable and available in many colors as well as clear. NuAire fabricates the acrylic materials in many different ways to produce a variety of products for the laboratory. Understanding about the care and use of the acrylic material is important.

#### Cleaning

A liquid detergent and water solution is recommended to clean acrylic. **DO NOT USE ABRASIVE CLEANERS, SUCH AS AJAX, SOFT SCRUB, ETC. ON ACRYLIC.** The following brand name cleaners have been found to work well with acrylic materials.

- Fantastik household cleaner
- Glass Plus cleaner
- Formula 409 household cleaner
- Cinch household cleaner

Scratches and abrasions may be buffed out using commercial polishing materials. Use of alcohol greater than 30% and acetone can cause irreversible damage and is not recommended (see material compatibility).

#### Material Compatibility

Table 1 gives an indication of the chemical resistance of Acrylic. The code used to describe chemical resistance is as follows:

##### **R = Resistant**

Acrylic withstands this substance for long periods and at temperatures up to 120°F (49°C).

##### **LR = Limited Resistance**

Acrylic only resists the action of this substance for short periods at room temperatures. The resistance for a particular application must be determined.

##### **N = Not Resistant**

Acrylic is not resistant to this substance. It is either swelled, attached, dissolved, or damaged in some manner.

Plastic materials can be attacked by chemicals in several ways. The methods of fabrication and/or conditions of exposure of acrylic sheet, as well as the manner in which the chemicals are applied, can influence the final results even for "R" coded chemicals. Some of these factors are listed below:

**Fabrication** - Stress generated while sawing, sanding, machining, drilling, and/or forming.

**Exposure** - Length of exposure stresses induced during the life of the product due to various loads, changes in temperatures, etc.

**Application of Chemicals** - by contact, rubbing, wiping, spraying, etc.

NuAire would not recommend the use of any LR and N rated materials. R rated materials should be tested with sample material to assure that no degradation will occur.

**Table 1**

**The table should therefore be used only as a general guide and, in case of doubt, it should be supplemented by tests made under actual working conditions.**

<b>Chemical</b>	<b>Code</b>	<b>Chemical</b>	<b>Code</b>
Acetic Acid (5%)	LR	Hydrogen Peroxide (3%)	R
Acetic Acid (Glacial)	N	Hydrogen Peroxide (28%)	LR
Acetone	N	Isopropyl Alcohol (30%)	LR
Ammonium Chloride	R	Kerosene	R
Ammonium Hydroxide (10%)	R	Lacquer Thinner	N
Ammonium Hydroxide (Conc.)	R	Methyl Alcohol (30%)	LR
Aniline	N	Methyl Alcohol (100%)	N
Battery Acid	R	Methyl Ethyl Ketone (MEK)	N
Benzene	N	Methylene Chloride	N
Butyl Acetate	N	Mineral Oil	R
Calcium Chloride (Sat.)	R	Nitric Acid (10%)	R
Calcium Hypochlorite	R	Nitric Acid (40%)	LR
Carbon Tetrachloride	LR	Nitric Acid (Conc.)	N
Chloroform	N	Oleic Acid	R
Chromic Acid	LR	Olive Oil	R
Citric Acid (10%)	R	Phenol Solution (5%)	N
Cottonseed Oil (Edible)	R	Soap Solution (Mild dish soap)	R
Detergent Solution (Heavy Duty)	R	Sodium Carbonate (2%)	R
Diesel Oil	R	Sodium Carbonate (20%)	R
Diethyl Ether	N	Sodium Chloride (10%)	R
Dimethyl Formamide	N	Sodium Hydroxide (1%)	R
Diethyl Phthalate	N	Sodium Hydroxide (10%)	R
Ethyl Acetate	N	Sodium Hydroxide (60%)	R
Ethyl Alcohol (30%)	LR	Sodium Hypochlorite (5%)	R
Ethyl Alcohol (95%)	N	Sulfuric Acid (3%)	R
Ethylene Dichloride	N	Sulfuric Acid (30%)	R
Ethylene Glycol	R	Sulfuric Acid (Conc.)	N
Gasoline	LR	Toluene	N
Glycerine	R	Transformer Oil	R
Heptane	R	Trichloroethylene	N
Hexane	R	Turpentine	R
Hydrochloric Acid	R	Water	R
Hydrofluoric Acid (25%)	N	Xylene	N