Dupont Delrin 500P (Acetal)

The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

"DELRIN" ACETAL RESIN ALL IN SYNONYM LIST DEL036G
DEL036G Revised 27-OCT-2005

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"DELRIN" is a registered trademark of DuPont.

Tradenames and Synonyms

"DELRIN" 100CP NC010,
"DELRIN" 100P NC010,
"DELRIN" 100PA NC010,
"DELRIN" 111PA NC010,
"DELRIN" 500P NC010,
"DELRIN" 900P NC010,
"DELRIN" 1700P NC010,
"DELRIN" DE9440 NC010,
"DELRIN" DE9446 NC010,
"DELRIN" DE20078 NC010,
"DELRIN" DE20088 NC010,
"DELRIN" DE20199 NC010,
"DELRIN" DE20302 NC010,
"DELRIN" DE20317 NC010, #

Company Identification

MANUFACTURER/DISTRIBUTOR
DuPont Engineering Polymers
1007 Market Street
Wilmington,DE 19898

PHONE NUMBERS
Product Information : 1-(800)-441-7515
Transport Emergency : 1-(800)-424-9300
Medical Emergency : 1-(800)-441-3637

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
ACETAL POLYMER		>98
STABILIZER		<2
FORMALDEHYDE	50-00-0	<0.005

Components (Remarks)

Material is not known to contain Toxic Chemicals under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

(COMPOSITION/INFORMATION ON INGREDIENTS - Continued)

Additives in this product do not present a respiration hazard unless the product is ground to a powder of respirable size and the dust is inhaled. All dusts are potentially injurious to the respiratory tract if respirable particles are generated and inhaled in sufficiently high concentrations. Good industrial hygiene practices, as with all dusts, should include precautions to prevent inhalation of respirable particles.

HAZARDS IDENTIFICATION

Potential Health Effects

ADDITIONAL HEALTH EFFECTS

Read the specific datasheet for product to be used before using this resin, as well as the Delrin Molding Guide.

ACETAL POLYMER

There are no known effects from exposure to the Delrin polymer itself. If overheated, the polymer releases formaldehyde which may cause skin, eye, and respiratory irritation and allergic reactions.

Significant skin permeation and systemic toxicity after contact appears unlikely. There are inconclusive or unverified reports of human sensitization.

Carcinogenicity Information

The following components are listed by IARC, NTP, OSHA or ACGIH as carcinogens.

Material	IARC	NTP	OSHA	ACGIH
FORMALDEHYDE	1	X	X	A2

FIRST AID MEASURES

First Aid

INHALATION
No specific intervention is indicated as the compound is not likely to be hazardous by inhalation. Consult a physician if necessary. If exposed to fumes from overheating or combustion, move to fresh air. Consult a physician if symptoms persist.

SKIN CONTACT
The compound is not likely to be hazardous by skin contact, but cleansing the skin after use is advisable. If molten polymer gets on skin, cool rapidly with cold water. Do not attempt to peel polymer from skin. Obtain medical treatment for thermal burn.

(FIRST AID MEASURES - Continued)

EYE CONTACT
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION
No specific intervention is indicated as compound is not likely to be hazardous by ingestion.

FIRE FIGHTING MEASURES

\# Flammable Properties

Flash Point : Not Applicable

"Delrin" dust cloud ignition temperature is 440 degrees C (824 degrees F).

Fire and Explosion Hazards:

Like most organic materials in powder form, dust generated from this product may form a flammable dust-air mixture. Potential for a dust explosion may exist. Minimize the generation and accumulation of dust. Keep away from sources of ignition.

Burns with invisible flame. Hazardous gases/vapors produced in fire are carbon monoxide, formaldehyde, and, isocyanates.

Extinguishing Media

Water, Foam, Dry Chemical, CO2.

Fire Fighting Instructions

Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Spill Clean Up

Spilled material is a slipping hazard.

Sweep up to avoid slipping hazard.

HANDLING AND STORAGE

Handling (Personnel)

See FIRST AID and PERSONAL PROTECTIVE EQUIPMENT SECTIONS.

 # Handling (Physical Aspects)

Open container only in well-ventilated area.

Minimize the generation and accumulation of dust.

Storage

Store in a cool, dry place. Store in a well ventilated area away from heat and sunlight.

Keep containers tightly closed to prevent moisture absorption and contamination.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

VENTILATION When hot processing this material, use local and/or general exhaust ventilation to control the concentration of vapors and fumes below exposure limits.

In cutting or grinding operations with this material, use local exhaust to control the concentration of dust below exposure limits.

Personal Protective Equipment

Eye/Face Protection

Wear safety glasses. Wear coverall chemical splash goggles and face shield when possibility exists for eye or face contact due to splashing or spraying of molten material. A full face mask positive-pressure air-supplied respirator provides protection from eye irritation.

Respirators

When temperatures exceed 230 degrees C and ventilation is inadequate to maintain concentrations below exposure limits, use a positive-pressure air-supplied respirator. Air- purifying respirators may not provide adequate protection.

During grinding, sawing, routing, drilling or sanding operations use a NIOSH/MSHA approved air-purifying respirator with dust/mist cartridge or canister if airborne particulate concentrations are expected to exceed permissible exposure levels.

Protective Clothing

(EXPOSURE CONTROLS/PERSONAL PROTECTION - Continued)

If there is potential contact with hot/molten material, wear heat resistant clothing and footwear.

Wear leather or cotton gloves when grinding, sawing, routing, drilling or sanding.

Exposure Guidelines

Exposure Limits
"DELRIN" ACETAL RESIN ALL IN SYNONYM LIST DEL036G

PEL	(OSHA)	: Particulates (Not Otherwise Regulated) 15 mg/m3, 8 Hr. TWA, total dust 5 mg/m3, 8 Hr. TWA, respirable dust

Other Applicable Exposure Limits
FORMALDEHYDE

PEL	(OSHA)	: 0.75 ppm, 0.92 mg/m3, 8 Hr. TWA STEL 2 ppm, 2.5 mg/m3
TLV	(ACGIH)	: Ceiling 0.3 ppm, A2 Sensitizer
AEL *	(DuPont)	: 0.5 ppm, 8 & 12 Hr. TWA 1 ppm, 15 minute TWA

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Melting Point	: 175-183 C (347-361 F)
Solubility in Water	: Insoluble
Odor	: Slight formaldehyde
Form	: Pellets
Specific Gravity	: >1

STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions.

Conditions to Avoid

Maintain polymer melt temperatures below 230 C (446 F) . Avoid prolonged exposure at or above the recommended processing temperatures.

(STABILITY AND REACTIVITY - Continued)

Incompatibility with Other Materials

Incompatible with strong acids and bases (decomposes forming formaldehyde) and strong oxidizing agents. At melt temperatures, acetal resins are incompatible with halogenated polymers such as PVC and PVDC and any elastomers containing halogenated polymers. Even small amounts of such contaminants can cause sudden and spontaneous formaldehyde gas formation. Workplace fume concentrations well above threshold levels are a likely result. Unsafe pressurization of equipment, e.g., extruders, molds, can also result.

Do not contaminate either virgin resin or rework. Do not mix this resin with pigments or additives other than those designated by DuPont. Do not mix this grade with other grades of Delrin, nor with any other resins, without first consulting DuPont. Doing any of the above may change the thermal stability of this resin and potentially cause decomposition.

Decomposition

Decomposition of this material depends on the length of time it is exposed to elevated temperatures. At the recommended processing temperature of 210-220 C (410-428 F), decomposition should not be significant until after 30 minutes. Decomposition may be accelerated by contaminants, pigments, and/or other additives.

Autoclaving with pressurized steam may lead to a rapid decomposition and should be done for only minimum amounts of time. **COOL COMPLETELY BEFORE OPENING** the autoclave.

Hazardous gas/vapor produced is formaldehyde.

Polymerization

Polymerization will not occur.

TOXICOLOGICAL INFORMATION

Animal Data

Delrin
Inhalation 6 hour LC50: > 22,000 mg/m3 in rats
Oral LD50: > 11,000 mg/kg in rats

Delrin is not a skin irritant, and is not a skin sensitizer in animals.

Single or repeated inhalation exposures to high concentrations of Delrin dust resulted in collapse of some areas of the lungs, other areas were over-inflated. This effect was seen as late as 11-19 days post-exposure.

(TOXICOLOGICAL INFORMATION - Continued)

No toxic effect were observed in animals ingesting Delrin.

No animal test reports are available to define carcinogenic, mutagenic, developmental, or reproductive hazards.

ECOLOGICAL INFORMATION

Ecotoxicological Information

AQUATIC TOXICITY:

No information is available. Toxicity is expected to be low based on insolubility in water. Do not discharge to streams, ponds, lakes or sewers.

DISPOSAL CONSIDERATIONS

Waste Disposal

Preferred options for disposal are (1) recycling, (2) incineration with energy recovery, and (3) landfill. The high fuel value of this product makes option 2 very desirable for material that cannot be recycled, but incinerator must be capable of scrubbing out acidic combustion products. Treatment, storage, transportation, and disposal must be in accordance with applicable federal, state/provincial, and local regulations.

TRANSPORTATION INFORMATION

Shipping Information

Not regulated in transportation by DOT/IMO/IATA.

REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status : In compliance with TSCA Inventory requirements for commercial purposes.

State Regulations (U.S.)

STATE RIGHT-TO-KNOW

No substances on the state hazardous substances list, for the states indicated below, are used in the manufacture of products on this Material Safety Data Sheet, with the exceptions indicated.

(REGULATORY INFORMATION - Continued)

SUBSTANCES ON THE PENNSYLVANIA HAZARDOUS SUBSTANCES LIST PRESENT AT A CONCENTRATION OF 1 % OR MORE (0.01% FOR SPECIAL HAZARDOUS SUBSTANCES)- None known.

WARNING - SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM- Formaldehyde.

SUBSTANCES ON THE NEW JERSEY WORKPLACE HAZARDOUS SUBSTANCE LIST PRESENT AT A CONCENTRATION OF 1% OR MORE (O.1% FOR SUBSTANCES IDENTIFIED AS CARCINOGENS, MUTAGENS OR TERATOGENS)- None known.

OTHER INFORMATION

Additional Information

MEDICAL USE: CAUTION: Do not use in medical applications involving permanent implantation in the human body. For other medical applications see DuPont CAUTION Bulletin No. H-50102.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS : REGULATORY AFFAIRS
DUPONT ENGINEERING POLYMERS
Address : CHESTNUT RUN PLAZA 713
WILMINGTON, DE 19880-0713
Telephone : 302-999-4257

# Indicates updated section.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS

Chemical Compatibility Information

Chemical Compatibility

Our products are leak tested before they are shipped, so you should never find one of our products to leak. If you ever find that one of our products is leaking, chances are you are looking at a chemical compatibility issue. Don't worry, this is an issue that we can solve with a little testing and your help.

The first thing to keep in mind is that you should test every chemical you plan to use with the product. The fact that water worked fine in the first test, has little relevance to the acid that you actually intend to use.

Next, know what to look for. If you find that the couplings are harder to connect then they have been in the past, you might be looking at a chemical compatibility issue. In an extreme case, if you find that the Shut-Off valves "Freeze" open, then you are very likely looking at a chemical issue. No, the products are not designed to work that way, and no it is not a flaw in the product design. What is happening is, at least one of the materials is swelling from the chemical, and because of the close tolerance of our products, the valve is clamped open. Again, this is easily solved with a little testing.

Don't be afraid to talk to us about any issues that you may have, in most cases we can easily solve it. After all, we have a very good idea what we are doing here.

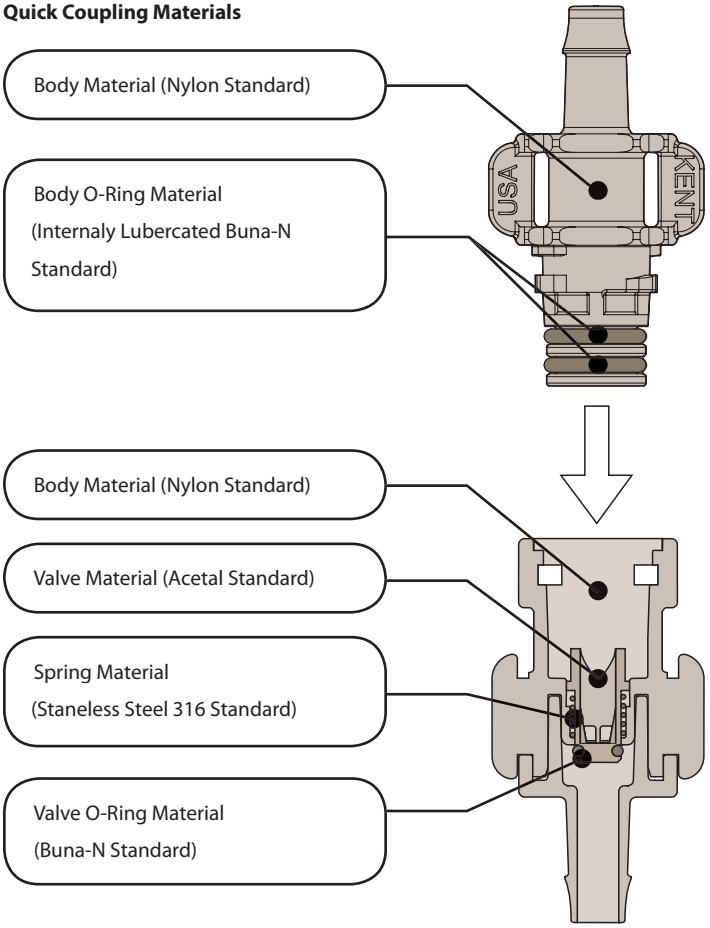
The table listed below is a good place to start your testing. If you see that any of the chemicals are listed as less then good, you may need a different material then what is on our standard products. Go ahead, call us at 970.593.3185 so that we can lend you a hand. Because we offer semi-custom options, we can help you figure out what you need.

OK now the legal stuff. The data presented in this table is for reference only. We recommend that you obtain Free Samples of our products for your testing. All information is supplied without expressed or implied warranty and does not constitute an endorsement.

Keep in mind that different products will have materials in them. Quick couplings have a number of different materials and are some times not visible when looking at the product. Be sure to test properly test your products before use.

We specialize in solutions and can solve most chemical issues

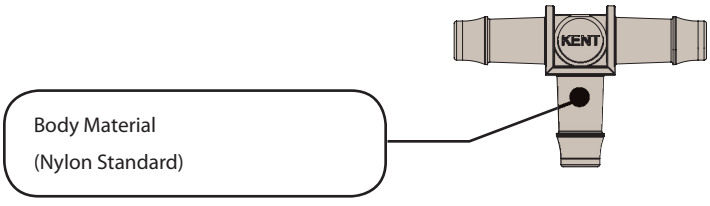
Quick Coupling Materials



Quick Coupling Chemical Compatibility Symptoms

- Hard Connection or Disconnection
- Valve "Freezing"
- Leaking from the Coupling
- Leaking from the Valve

Fitting Materials



Tube Fitting Chemical Compatibility Symptoms

- Product Becoming Softer
- Leaking From Side Wall
- Leaking around barb

Chimical Compatibility Information (Plastic Materials)

CHEMICAL	NYLON	ACETAL	POLYPROPYLENE	POLYCARBONATE	PVDF (KYNAR®)
Acetic Acid	Severe Effect	Severe Effect	B-Good	B-Good	C-Fair
Acetone	Excellent	Excellent	A-Excellent	D-Severe Effect	D-Severe Effect
Acetylene	Excellent	Excellent	A-Excellent	D-Severe Effect	A-Excellent
Alcohols:Amyl	Excellent	Excellent	B-Good	B-Good	A-Excellent
Alcohols:Benzyl	Good	Excellent	A-Excellent	N/A	A-Excellent
Alcohols:Butyl	Severe Effect	Excellent	A-Excellent	A-Excellent	A-Excellent
Alcohols:Diacetone	Excellent	Excellent	B-Good	N/A	A-Excellent
Alcohols:Ethyl	Excellent	Excellent	A-Excellent	B-Good	N/A
Alcohols:Hexyl	Excellent	Excellent	N/A	N/A	N/A
Alcohols:Isobutyl	Excellent	Excellent	A-Excellent	N/A	N/A
Alcohols:Isopropyl	Severe Effect	Excellent	A-Excellent	A-Excellent	N/A
Alcohols:Methyl	Good	Excellent	A-Excellent	B-Good	A-Excellent
Alcohols:Octyl	Excellent	Excellent	N/A	N/A	N/A
Alcohols:Propyl	Severe Effect	Excellent	A-Excellent	N/A	A-Excellent
Aluminum Hydroxide	Excellent	Excellent	A-Excellent	B-Good	A-Excellent
Antifreeze	Severe Effect	Severe Effect	D-Severe Effect	N/A	N/A
Barium Sulfate	Excellent	Good	B-Good	D-Severe Effect	A-Excellent
Benzene	Excellent	Excellent	D-Severe Effect	D-Severe Effect	A-Excellent
Benzoic Acid	Severe Effect	Good	B-Good	B-Good	A-Excellent
Brewery Slop	N/A	Good	N/A	N/A	N/A
Butter	N/A	Excellent	N/A	N/A	N/A
Buttermilk	Good	Excellent	A-Excellent	A-Excellent	N/A
Cane Juice	Excellent	Excellent	C-Fair	N/A	A-Excellent
Carbon Dioxide (dry)	Excellent	Excellent	A-Excellent	N/A	A-Excellent
Carbon Monoxide	Excellent	Excellent	A-Excellent	N/A	B-Good
Carbon Tetrachloride	Severe Effect	Good	D-Severe Effect	D-Severe Effect	A-Excellent
Catsup	Excellent	Good	A-Excellent	N/A	N/A
Chlorine (dry)	Severe Effect	Severe Effect	D-Severe Effect	N/A	A-Excellent
Chlorine Water	Fair	Severe Effect	D-Severe Effect	N/A	B-Good
Chlorobenzene (Mono)	Severe Effect	Severe Effect	C-Fair	D-Severe Effect	A-Excellent
Chocolate Syrup	Excellent	Excellent	A-Excellent	A-Excellent	N/A
Clorox® (Bleach)	Excellent	Severe Effect	D-Severe Effect	N/A	A-Excellent
Coffee	Excellent	Excellent	A-Excellent	N/A	N/A
Cyclohexanone	Excellent	Excellent	D-Severe Effect	D-Severe Effect	D-Severe Effect
Diesel Fuel	Excellent	Excellent	A-Excellent	A-Excellent	A-Excellent
Ethanol	Excellent	Excellent	A-Excellent	B-Good	N/A
Ethyl Acetate	Excellent	Excellent		D-Severe Effect	D-Severe Effect
Ethylene Glycol	Excellent	Good	A-Excellent	B-Good	A-Excellent
Fluorine	Severe Effect	Severe Effect	D-Severe Effect	C-Fair	A-Excellent
Fruit Juice	Excellent	Severe Effect	B-Good	N/A	A-Excellent
Gasoline (high-aromatic)	Excellent	Good	A-Excellent	A-Excellent	A-Excellent
"Gasoline, leaded, ref."	Excellent	Excellent	B-Good	A-Excellent	A-Excellent
"Gasoline, unleaded"	Excellent	Excellent	C-Fair	A-Excellent	A-Excellent
Grape Juice	Excellent	Excellent	N/A	N/A	A-Excellent
Honey	Excellent	Excellent	A-Excellent	A-Excellent	A-Excellent
Hydrocyanic Acid	Good	Good	C-Fair	N/A	A-Excellent
Hydrogen Peroxide 100%	Severe Effect	Severe Effect	B-Good	A-Excellent	A-Excellent
"Jet Fuel (JP3, JP4, JP5)"	Fair	Excellent	A-Excellent	A-Excellent	B-Good
Kerosene	Excellent	Excellent	B-Good	D-Severe Effect	A-Excellent
Magnesium Chloride	Excellent	Good	A-Excellent	A-Excellent	A-Excellent
Methanol (Methyl Alcohol)	Good	Excellent	A-Excellent	B-Good	A-Excellent
Methyl Ethyl Ketone	Excellent	Fair	B-Good	D-Severe Effect	D-Severe Effect
Milk	Excellent	Excellent	B-Good	A-Excellent	A-Excellent
Motor oil	Excellent	Good	A-Excellent	A-Excellent	B-Good
Nitric Acid (Concentrated)	Severe Effect	Severe Effect	D-Severe Effect	C-Fair	A-Excellent
Ozone	Severe Effect	Fair	B-Good	A-Excellent	A-Excellent
Phenol (10%)	Severe Effect	Good	B-Good	B-Good	A-Excellent
Rum	Excellent	Excellent	A-Excellent	N/A	N/A
Sea Water	Excellent	Excellent	A-Excellent	A-Excellent	A-Excellent
Sodium Chloride	Excellent	Excellent	A-Excellent	A-Excellent	A-Excellent
Sodium Hydroxide (80%)	Fair	Severe Effect	A-Excellent	D-Severe Effect	A-Excellent
Sulfuric Acid (75-100%)	Severe Effect	N/A	C-Fair	D-Severe Effect	A-Excellent
Sulfuric Acid (cold concentrated)	Severe Effect	N/A	A-Excellent	N/A	A-Excellent
Sulfuric Acid (hot concentrated)	Severe Effect	N/A	D-Severe Effect	D-Severe Effect	C-Fair
Tetrahydrofuran	Excellent	Excellent	C-Fair	D-Severe Effect	B-Good
Toluene (Toluol)	Excellent	Fair	C-Fair	D-Severe Effect	A-Excellent
Trichloroethylene	Fair	Severe Effect	C-Fair	N/A	B-Good
Urine	Good	Excellent	A-Excellent	N/A	A-Excellent
Water:Deionized	Excellent	N/A	A-Excellent	N/A	A-Excellent
Water:Distilled	Excellent	Good	A-Excellent	A-Excellent	A-Excellent
Water:Fresh	Excellent	Excellent	A-Excellent	A-Excellent	A-Excellent
Water:Salt	Excellent	Excellent	A-Excellent	A-Excellent	A-Excellent
Whiskey & Wines	Excellent	Excellent	A-Excellent	A-Excellent	A-Excellent

Chimical Compatibility Information (Springs and O-Rings

CHEMICAL	BUNA-N	VITON A	EPDM	SILCONE	STAINLESS STEEL
Acetic Acid	Fair	Good	Excellent	C-Fair	Severe Effect
Acetone	Severe Effect	Severe Effect	Excellent	D-Severe Effect	Excellent
Acetylene	Good	Excellent	Excellent	B-Good	Excellent
Alcohols:Amyl	Good	Excellent	Excellent	D-Severe Effect	Excellent
Alcohols:Benzyl	Severe Effect	Excellent	Good	N/A	Good
Alcohols:Butyl	Fair	Excellent	Excellent	B-Good	Excellent
Alcohols:Diacetone	Severe Effect	Severe Effect	Excellent	D-Severe Effect	Excellent
Alcohols:Ethyl	Fair	Excellent	Excellent	B-Good	Excellent
Alcohols:Hexyl	Excellent	Fair	Fair	B-Good	Excellent
Alcohols:Isobutyl	Good	Excellent	Excellent	A-Excellent	Excellent
Alcohols:Isopropyl	Good	Excellent	Excellent	A-Excellent	Good
Alcohols:Methyl	Excellent	Fair	Excellent	A-Excellent	Excellent
Alcohols:Octyl	Good	Good	Excellent	B-Good	Excellent
Alcohols:Propyl	Excellent	Excellent	Excellent	A-Excellent	Excellent
Aluminum Hydroxide	Excellent	Excellent	Excellent	N/A	Excellent
Antifreeze	Excellent	Excellent	Excellent	C-Fair	N/A
Barium Sulfate	Excellent	Excellent	Excellent	A-Excellent	Good
Benzene	Severe Effect	Excellent	Severe Effect	D-Severe Effect	Good
Benzoic Acid	Severe Effect	Excellent	Severe Effect	B-Good	Good
Brewery Slop	Excellent	Excellent	N/A	N/A	N/A
Butter	Excellent	Excellent	Excellent	B-Good	Fair
Buttermilk	Excellent	Excellent	Excellent	A-Excellent	Excellent
Cane Juice	Excellent	Excellent	Excellent	A-Excellent	Excellent
Carbon Dioxide (dry)	Excellent	Good	Good	B-Good	Excellent
Carbon Monoxide	Excellent	Excellent	Excellent	A-Excellent	Excellent
Carbon Tetrachloride	Severe Effect	Excellent	Severe Effect	D-Severe Effect	Good
Catsup	Excellent	Excellent	Excellent	N/A	Excellent
Chlorine (dry)	Good	Excellent	Excellent	D-Severe Effect	Excellent
Chlorine Water	Severe Effect	Excellent	Fair	D-Severe Effect	Fair
Chlorobenzene (Mono)	Severe Effect	Excellent	Severe Effect	D-Severe Effect	Excellent
Chocolate Syrup	Excellent	Excellent	Excellent	N/A	Excellent
Clorox® (Bleach)	Severe Effect	Excellent	Good	N/A	Excellent
Coffee	Excellent	Excellent	Excellent	A-Excellent	Excellent
Cyclohexanone	Severe Effect	Severe Effect	Good	D-Severe Effect	Excellent
Diesel Fuel	Excellent	Excellent	Severe Effect	D-Severe Effect	Excellent
Ethanol	Fair	Excellent	Excellent	B-Good	Excellent
Ethyl Acetate	Severe Effect	Severe Effect	Good	B-Good	Good
Ethylene Glycol	Excellent	Excellent	Excellent	A-Excellent	Good
Fluorine	Severe Effect	Fair	Excellent	D-Severe Effect	Fair
Fruit Juice	Excellent	Excellent	N/A	N/A	Excellent
Gasoline (high-aromatic)	Excellent	Excellent	Severe Effect	D-Severe Effect	Excellent
"Gasoline, leaded, ref."	Excellent	Excellent	Severe Effect	D-Severe Effect	Excellent
"Gasoline, unleaded"	Excellent	Excellent	Severe Effect	D-Severe Effect	Excellent
Grape Juice	Excellent	Excellent	Excellent	A-Excellent	Excellent
Honey	Excellent	Excellent	Excellent	A-Excellent	Excellent
Hydrocyanic Acid	Good	Excellent	Excellent	D-Severe Effect	Good
Hydrogen Peroxide 100%	Severe Effect	Excellent	Severe Effect	B-Good	Good
"Jet Fuel (JP3, JP4, JP5)"	Excellent	Excellent	Severe Effect	D-Severe Effect	Excellent
Kerosene	Excellent	Excellent	Severe Effect	D-Severe Effect	Excellent
Magnesium Chloride	Excellent	Excellent	Excellent	A-Excellent	Severe Effect
Methanol (Methyl Alcohol)	Excellent	Fair	Excellent	A-Excellent	Excellent
Methyl Ethyl Ketone	Severe Effect	Severe Effect	Excellent	D-Severe Effect	Excellent
Milk	Excellent	Excellent	Excellent	A-Excellent	Excellent
Motor oil	Excellent	N/A	Severe Effect	N/A	Excellent
Nitric Acid (Concentrated)	Severe Effect	Excellent	Severe Effect	D-Severe Effect	Excellent
Ozone	Severe Effect	Excellent	Excellent	A-Excellent	Good
Phenol (10%)	Severe Effect	Excellent	Good	D-Severe Effect	Good
Rum	Excellent	Excellent	Excellent	A-Excellent	Excellent
Sea Water	Excellent	Excellent	Excellent	A-Excellent	Fair
Sodium Chloride	Excellent	Excellent	Excellent	A-Excellent	Good
Sodium Hydroxide (80%)	Severe Effect	Severe Effect	Good	A-Excellent	Fair
Sulfuric Acid (75-100%)	Fair	Excellent	Good	D-Severe Effect	Fair
Sulfuric Acid (cold concentrated)	Severe Effect	Good	Fair	D-Severe Effect	Fair
Sulfuric Acid (hot concentrated)	Severe Effect	Excellent	Severe Effect	D-Severe Effect	Severe Effect
Tetrahydrofuran	Severe Effect	Severe Effect	Severe Effect	D-Severe Effect	Excellent
Toluene (Toluol)	Severe Effect	Fair	Severe Effect	D-Severe Effect	Excellent
Trichloroethylene	Severe Effect	Excellent	Severe Effect	D-Severe Effect	Good
Urine	Excellent	Excellent	Excellent	N/A	Excellent
Water:Deionized	Excellent	Excellent	Excellent	N/A	Excellent
Water:Distilled	Excellent	Excellent	Excellent	C-Fair	Excellent
Water:Fresh	Excellent	Excellent	Excellent	B-Good	Excellent
Water:Salt	Excellent	Excellent	Excellent	B-Good	Good
Whiskey & Wines	Excellent	Excellent	Excellent	A-Excellent	Excellent