

5. Chemical resistance

ACO Drain channel bodies are highly resistant to chemical attack and, with the appropriate grate, can be used in most environments where acids and dilute alkalis are encountered.

Refer to chemical chart below for resistance of Polyester and Vinyl ester polymer concrete. FlowDrain products use the same polyester resin - refer to Polyester details for chemical resistance.



When greater chemical resistance is required, Vinyl ester polymer concrete channels should be specified.

These recommendations are for guidance only. Customers are advised to test a coupon of polymer concrete to ensure suitability. Test coupons are available free of charge from ACO.

Polymer concrete is not affected by road de-icing salts, and conforms to **ASTM - B117 Salt Spray Test**.

Important considerations for chemical environments

When reviewing potential applications of trench drains in chemical environments, the following issues should be considered;

1. Type(s) & mixture of chemical(s).
2. Concentration percentages.
3. Contact time with trench system.
4. Temperatures of chemicals flowing into the trench drain. 180°F (82°C) max.
5. Flushing system employed to clear chemicals from the system.
6. Cleaning agents should be checked for compatibility with trench materials.
7. ACO coupons can be used for final determination of chemical resistance.
8. Grate, locking mechanism, edge rail, outlet and trash bucket materials should be checked for chemical resistance.
9. Check sealant for compatibility.

Note:

If ACO Drain standard products are unable to provide adequate chemical resistance, contact Aquaduct (800) 662-2377 for a custom product solution.

Chemical Medium	Max. conc..	Polyester		Max. conc..	Vinyl ester	
		Short time exposure 72 hours	Long time exposure 42 days		Short time exposure 72 hours	Long time exposure 42 days
Acetic Acid	30%	✓	✗	75%	✓	✓
Acetone	10%	✓	✗	10%	✓	✗
Ammonia	10%	✓	✗	10%	✓	✗
Aniline	100%	✓	✗	100%	✓	✗
Aniline in Ethyl Alcohol	10%	✓	✓	10%	✓	✓
Benzene	100%	✓	✗	100%	✓	✗
Boric Acid	100%	✓	✓	100%	✓	✓
Butyric Acid	25%	✓	✓	50%	✓	✓
Butyl Alcohol	100%	✓	✓	100%	✓	✓
Calcium Chloride	100%	✓	✓	100%	✓	✓
Calcium Hydroxide	100%	✓	✗	100%	✓	✓
Caster Oil	100%	✓	✓	100%	✓	✓
Chloric Acid	5%	✓	✗	5%	✓	✓
Chromic Acid	5%	✓	✓	20%	✓	✓
Citric Acid	100%	✓	✓	100%	✓	✓
Diesel Fuel	100%	✓	✓	100%	✓	✓
Ethanol	100%	✓	✗	95%	✓	✓
Ethlendiamine	100%	✓	✓	100%	✓	✓
Ethyl Acetate	100%	✓	✗	100%	✓	✗
Ferrous Sulfate	30%	✓	✓	100%	✓	✓
Fluoralic Acid	10%	✓	✓	10%	✓	✓
Formaldehyde	35%	✓	✓	100%	✓	✓
Formic Acid	10%	✓	✗	10%	✓	✓
Fuel Oil	100%	✓	✓	100%	✓	✓
Gasoline	100%	✓	✓	100%	✓	✓
n-Heptane	100%	✓	✓	100%	✓	✓
n-Hexane	100%	✓	✓	100%	✓	✓
Hydraulic Oil	100%	✓	✓	100%	✓	✓
Hydrochloric Acid	10%	✓	✓	37%	✓	✓
Hydrofluoric Acid	5%	✓	✗	20%	✓	✓
JP4	100%	✓	✓	100%	✓	✓
JP8	100%	✓	✓	100%	✓	✓
Lactic Acid	10%	✓	✓	100%	✓	✓
Methanol	5%	✗	✗	5%	✓	✗
Methyl Amine	100%	✓	✗	100%	✓	✗
Methyl Ethyl Ketone	100%	✓	✗	100%	✓	✗
Mineral Oil SAE5W50	100%	✓	✓	100%	✓	✓
Monochlor Benzene	0.05%	✗	✗	0.05%	✓	✓
Monochloroacetic Acid	10%	✓	✓	10%	✓	✓
Nitric Acid	10%	✓	✗	20%	✓	✓
n-Nonane	100%	✓	✓	100%	✓	✓
Iso-Octane	100%	✓	✗	100%	✓	✗
Oxalic Acid	100%	✓	✓	100%	✓	✓
Phenol	100%	✓	✗	100%	✓	✗
Phosphoric Acid	10%	✓	✓	75%	✓	✓
Potassium Hydroxide	10%	✗	✗	10%	✓	✓
Sodium Acetate	100%	✓	✗	100%	✓	✓
Sodium Carbonate	20%	✓	✓	35%	✓	✓
Sodium Chloride	100%	✓	✓	100%	✓	✓
Sodium Hydroxide	15%	✓	✗	25%	✓	✓
Sodium Hypochloric	5%	✓	✓	5%	✓	✓
Sulfuric Acid	40%	✓	✓	70%	✓	✓
Tetrafluoroborsaur	20%	✓	✗	20%	✓	✓
Toluene	100%	✓	✗	100%	✓	✗
Trichloroethylene	100%	✗	✗	100%	✗	✗
Triethylamine	100%	✓	✓	100%	✓	✓
Xylene	100%	✓	✗	100%	✓	✗

Note: Maximum operating temperature of 180°F (82°C)