



Zecor-Z High Silicon Austenitic Stainless Steel Alloy

Zecor-Z offers exceptional **corrosion resistance**, particularly in environments involving concentrated sulfuric acid. Zecor-Z has become a material of choice in industries where both durability and cost-effectiveness are paramount.



Sulphuric Acid Power Plants

Benefits

1. Exceptional Corrosion Resistance

- Highly resistant to concentrated sulfuric acid, making it ideal for chemical processing plants.
- Outperforms standard stainless steels (304, 316) in aggressive environments.

2. Extended Equipment Lifespan

- Reduces maintenance costs by minimizing corrosion-related failures.
- Enhances the durability of heat exchangers, piping, and reactors.

3. High Mechanical Strength

- Withstands harsh industrial conditions, including high pressures and temperatures.
- Maintains structural integrity over prolonged use.

4. Cost Efficiency

- Reduces the need for frequent replacements, lowering long-term operational costs.
- Offers a balance between performance and affordability compared to exotic alloys.

5. Versatility in Applications

- Used in acid production plants, chemical manufacturing, and industrial gas processing.
- Suitable for industries requiring high resistance to corrosive substances.



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ZECOR-Z COMPONENTS IN SULFURIC ACID PLANTS



ZeCor-Z Heat Exchangers



ZeCor-Z Heat Piping & Fittings



ZeCor-Z Tower Internals



ZeCor-Z Acid Coolers

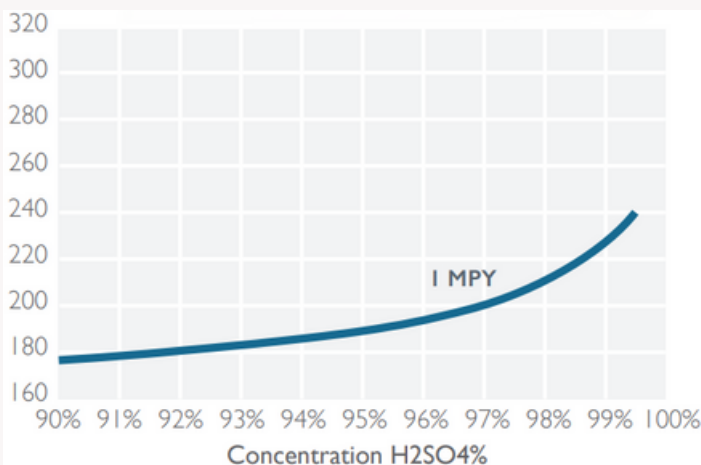


ZeCor-Z Pumps & Valves



ZeCor-Z Storage Tanks & Linings

Corrosion Curve



1 mpy (1 mil per year = .001 inch/yr = .0254 mm/yr)

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ZECOR® Z ALLOY: CHEMICAL COMPOSITION, MECHANICAL & PHYSICAL PROPERTIES

Chemical Composition (%)

ZeCor® Z is a corrosion-resistant high-performance alloy, primarily developed for sulfuric acid applications. Its exact composition is proprietary, but it generally consists of:

Element	Composition (%)
Iron (Fe)	Balance
Chromium (Cr)	~ 6.0 - 7.0
Nickel (Ni)	~ 5.0 - 6.0
Molybdenum (Mo)	~ 1.5 - 2.5
Silicon (Si)	~ 2.0 - 3.0
Carbon (C)	< 0.03
Manganese (Mn)	< 1.5
Others	Minor trace elements

Mechanical Properties

ZeCor® alloys offer exceptional strength and corrosion resistance, particularly in highly acidic environments.

Property	Value
Tensile Strength	~ 485 MPa (70 ksi)
Yield Strength	~ 275 MPa (40 ksi)
Elongation	~ 30%
Hardness	~ 90-110 HRB

Physical Properties

Property	Value
Density	~ 7.8 g/cm ³
Melting Range	~ 1370 - 1450°C
Thermal Conductivity	~ 15 W/m·K
Electrical Resistivity	~ 75 μΩ·cm
Coefficient of Thermal Expansion	~ 11.5 x 10 ⁻⁶ /°C

ZeCor® Z is specifically designed for superior corrosion resistance in sulfuric acid environments, offering longer service life and reduced maintenance costs compared to conventional stainless steels.

