

## ACME<sup>®</sup> Cast Nickel Alloys

**Cast Nickel CZ 100**  
**Illium 98 - Illium B - Illium G**  
**M-35 (Monel)**  
**H-Monel**  
**S-Monel**  
**CY 40 (Inconel)**  
**CW-12m (Hastelloy-C)**  
**N-12M (Hastelloy-B)**

Static Cast Tubes in ACME<sup>®</sup> Illium 98  
for a client spec. Ø 102 mm, wall thickness 8/10 mm, length 850-1200 mm  
Cast & Machined Flanges shown are in Hastelloy C



## Cast Nickel Alloy

### Custom Made Components to Client Specifications

Commercial Popular Name	Designation	Applications (Typical Uses)
<b>Hastelloy C</b> <b>Chlorimet 3</b>	CW-12M 55Ni-17Mo-16Cr-6Fe-4W	<b>Typical Uses:</b> Chemical process equipment <b>Precautions in use</b> Except for very weak solutions, this alloy is not recommended for use above 50°C (120°F) in nitric or hydrochloric acid that is contaminated with metallic salts
<b>Inconel</b>	CY-40 72Ni-16Cr-8Fe-2Si	<b>Typical Uses:</b> For industrial applications that demand high strength, pressure tightness, and high resistance to destructive chemical action, mechanical wear and oxidation at elevated temperatures
<b>Cast Nickel</b>	CZ-100	<b>Typical Uses:</b> Equipment handling corrosives such as caustics; applications where it is necessary to avoid contamination of a product with metals such as copper and iron. Resistant to galling under conditions of boundary lubrication can be provided with adjustment of minor elements including carbon
<b>Monel</b>	M-35 65Ni-30Cu-1.5Si	<b>Typical Uses:</b> For industrial applications that demand high strength, pressure tightness, and high resistance to destructive chemical action, mechanical wear
<b>Nickel-Copper Alloy</b>	H-Monel 65Ni-30Cu-3Si  S-Monel 63Ni-30Cu-4Si	<b>Typical Uses:</b> Industrial applications that demand non-galling and anti-seizing characteristics, moderately high hardness, moderate machinability and resistance to corrosive attack
<b>Hastelloy B</b> <b>Chlorimet 2</b>	N-12M 62Ni-30Mo-5Fe	<b>Typical Uses:</b> Chemical process equipment; high-temperature structural applications <b>Precautions in use</b> Not recommended for strongly oxidizing acids or salts. In oxidizing atmospheres, service temperatures should not exceed 760° (1400°F); N-12M may be used at substantially higher temperatures in reducing atmospheres
<b>Illium 98</b>	55Ni-28Cr-8.5Mo-5.5Cu	<b>Typical Uses:</b> A machinable high strength casting alloy designed for hot sulphuric acid service. Because it has good resistance to sulphuric acid for over entire range of concentrations, Illium 98 is used for components for pumps, valves and various other types of process equipment <b>Precautions in use</b> Not recommended for service in halogens, halogen acids or halogen salt solutions, except that Illium 98 is highly resistant to seawater and to many fluorine compounds
<b>Illium B</b>	50Ni-28Cr-8.5Mo-5.5Cu-3.5Si	<b>Typical Uses:</b> Used in the form of machined castings where corrosion resistance is of primary importance but where resistance to erosion, wear and galling must also be considered. Typical uses include thrust and rotary bearings, cutting blades and pump impellers where high hardness is required in corrosive environments <b>Precautions in use</b> Attacked by hot concentrated nitric acid and other highly oxidizing media. Not recommended for halogen compounds, but may satisfactorily resist seawater
<b>Illium G</b>	56Ni-22.5Cr-6.5Mo-6.5Cu	<b>Typical Uses:</b> Provides superior corrosion resistance in a machinable high-strength casting alloy. Used extensively in dies of viscose cellophane extrusion. Also used in pumps, valves, and other process equipment environments encountered <b>Precautions in use</b> Generally, not recommended for halogens, halogen acids or halogen salt solutions. However, the alloy is highly resistant to seawater and to fluorine compounds in oxidizing environments.