GX2CrNiMoN19-11-2 (EN 1.4490) Stainless Steel Casting Material

Introduction

GX2CrNiMoN19-11-2 is a corrosion-resistant stainless steel casting grade specified in ISO 11972. Its chemical composition, mechanical properties and heat treatment are defined by the applicable standard context. CQ family-approved manufacturing options include Investment Casting, Shell Molding Casting and Sand Casting.

Manufacturing Process

Investment Casting
Shell Molding Casting
Sand Casting

Equivalent Grades

N/A

Reference Standards

Standard	Standard Title	Edition	Specification	Identifier
ISO 11972	Corrosion-resistant cast steels for general applications	2023	GX2CrNiMoN19-11-2	—

Physical Properties

N/A

Chemical Composition

Element	ISO 11972 Edition 2023 · wt.%
C	<= 0.03
Si	<= 1.5
Mn	<= 2.0
P	<= 0.035
S	<= 0.030
Cr	18.0–20.0
Ni	9.0–12.0
Mo	2.00–2.50
N	0.12–0.20

CASTING QUALITY

Heat Treatment

ISO 11972–2023 · Solution treated

Step	Operation	Temperature	Cooling
1	solution treatment	1080 °C[1]	quench

Notes

ISO 11972 · Edition 2023

[1] Solution treated: Depending on thickness, accelerated air cooling.

Mechanical Properties

Property	ISO 11972 Edition 2023[1]
Yield Strength (Rp0.2)	>= 230 MPa
Tensile Strength	>= 510 MPa
Elongation	>= 30 %
Impact Energy	>= 80 J[2]
Yield Strength (Rp1.0)	>= 255 MPa

Notes

ISO 11972 · Edition 2023

[1] All properties in this column: wall thickness <= 150 mm; Room temperature; Test blocks used to verify mechanical properties shall not exceed 150 mm thickness. Properties for samples removed from castings shall be agreed between manufacturer and purchaser.

[2] Impact Energy: Verification of impact tests is required only when indicated by the customer.

Welding Conditions

N/A

Applications

At the stainless steel casting-family level, typical applications include valve bodies, pump housings and custom corrosion-service cast components. Suitability must be checked against the specified service conditions and grade requirements.

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Casting Quality Industrial

As a professional manufacturer in China, We Casting Quality focus on Metal Parts OEM industry, and provide solutions and services in Metal Casting field as following:

Sand Casting

Investment Casting, Lost Wax process

Shell Casting

Lost Form Casting

Permanent Mold Casting

CNC Machining

CAD Design

Tools/Mold Design

Material Supplied

Cast Iron Castings (Grey Iron, Malleable Iron, Ductile Iron)

Carbon Steel and Alloy Steel Castings

Stainless Steel and Duplex Stainless Steel Castings

Aluminum Castings

Bronze and Brass Castings

Titanium and Cobalt Alloy Castings

What We Can Do

Design Ability

Our engineers will help you to improve the designs based on casting technology, then The simulation software will be processed to verify the casting pouring system. Pro/E, Solidworks, AutoCAD and ProCast are available in Casting Quality Industrial.

Saving Cost

Some manufacture processes may lead high cost. We will analyses the designs and advise the suitable methods to our customers. The best solution will be adopted.

Quality Control

From the raw material selecting to bulk production processing, all procedures will follow PPAP program if necessary. The certificates will be provided including chemistry, hardness, mechanical property or NDT testing.

Production Capacity

The max iron/steel castings can reach 30tons in weight, meanwhile the minus casting is around 1gram only.

We also have prototyping and 3D scanning ability for sample plan.

Logistic Service

The products will be delivered directly to customer’s workshop, which will save plenty of work for clients.

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