PAGE 1 - PRODUCT OVERVIEW

Mg

High Potential Magnesium Anode

High Potential Magnesium Sacrificial Anode for Cathodic Protection of Buried Steel Structures

CathPro High Potential Magnesium Anode is manufactured from high-purity magnesium and designed to deliver high driving voltage for cathodic protection in high-resistivity soil environments.

- Manufactured from 99% pure magnesium according to ASTM B843-M1C reference requirements
- High driving voltage for dry, sandy, or high-resistivity soil applications
- Available as bare anodes or prepackaged assemblies with cable and backfill
- D-shaped models and customized cast magnesium anodes available

Document Control

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PAGE 2 - APPLICATIONS & FORMS

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Typical Applications

Typical Applications

Application Area	Application Area
Buried steel pipelines	Underground storage tanks
Tank bottom cathodic protection	Casing protection
Buried steel structures	Temporary cathodic protection systems
Dry or sandy soil areas	Structures with corrosion hot-spots

Product Forms

Bare Anode

Cast high potential magnesium alloy anode body with steel core or connection insert, supplied according to drawing and project specification.

Prepackaged Assembly

- Magnesium anode body
- Cable connection and sealing
- Backfill mixture
- Cotton bag or project-approved package
- Export packing and marking

PAGE 3 - TECHNICAL DATA

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Technical Data

CathPro High Potential Magnesium Anodes are designed for soil and buried steel cathodic protection where higher driving voltage is required. The HP alloy is typically selected for high-resistivity soil, dry or sandy areas, and structures with multiple localized corrosion hot-spots.

Applicable Standard

Item	Reference
Material Type	High potential magnesium sacrificial anode
Alloy Reference	ASTM B843-M1C or project-specific high potential magnesium anode alloy
Manufacturing Reference	Manufactured from 99% pure magnesium, according to ASTM B843-M1C reference requirements
Electrochemical Test Reference	ASTM G97 or project-approved test method
Supply Form	Bare anode or prepackaged anode assembly

High Potential Performance

The high driving voltage means greater protection can be delivered from fewer anodes. Therefore, the product is suitable for dry or sandy areas where soil resistivity may exceed 2,000 ohm-cm, or for steel structures containing numerous corrosion hot-spots.

Technical Measurement	Performance
Open Circuit Voltage	1.70 - 1.75 Volts
Closed Circuit Voltage	1.58 - 1.62 Volts
Current Capacity	1100 A.h/kg (500 A.h/lb)
Current Efficiency	50% min.

Note: Voltage and electrochemical values should be confirmed according to the applicable test method, reference electrode, project specification, and purchase order requirements.

PAGE 4 - COMPOSITION

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Chemical Composition & Anode Construction

High Potential Magnesium Anode Composition

High potential anode is manufactured from 99% pure magnesium, according to ASTM B843-M1C standard reference requirements.

Element	Content (%)
Aluminum (Al)	0.010 max.
Manganese (Mn)	0.500 - 1.300
Zinc (Zn)	-
Silicon (Si)	0.050 max.
Copper (Cu)	0.020 max.
Iron (Fe)	0.030 max.
Nickel (Ni)	0.001 max.
Single Impurity	0.050 max.
Other Impurities	0.300 max.
Magnesium (Mg)	Remainder

Note: Chemical composition can be controlled according to ASTM B843-M1C, customer specification, or project-specific requirements. Material certificates can be supplied upon request.

PAGE 5 - ANODE CONSTRUCTION

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Anode Construction

Anode Construction

Bare Anode

Bare high potential magnesium anodes are supplied as cast magnesium alloy bodies with steel core inserts or cable connection areas according to the required design.

Prepackaged Anode Assembly

- Magnesium anode body
- Steel core or connection insert
- Cable connection
- Cable sealing and protection
- Special backfill mixture
- Cotton bag or project-approved package

Cable Options

Cable type, cable size, and cable length can be supplied according to project requirements. Common options include XLPE/PVC or other project-specified cable types.

PAGE 6 - HP SERIES DIMENSIONS

Mg

HP Series Anode & Package Dimensions

HP Series Dimensions - ASTM B843 M1C

Item No.	Model	Anode W x H x L	N.W.	Package Dia x L	G.W.
CP-MG-3	HP 3D3	89 x 95 x 127 mm 3.5 x 3.75 x 5 in	1.4 kg 3 lb	Dia 152 x 254 mm Dia 6 x 10 in	TBC
CP-MG-5	HP 5D5	89 x 95 x 216 mm 3.5 x 3.75 x 8.5 in	2.3 kg 5 lb	Dia 152 x 305 mm Dia 6 x 12 in	TBC
CP-MG-9	HP 9D3	89 x 95 x 356 mm 3.5 x 3.75 x 14 in	4.1 kg 9 lb	Dia 152 x 432 mm Dia 6 x 17 in	TBC
CP-MG-17	HP 17D3	89 x 95 x 654 mm 3.5 x 3.75 x 25.75 in	7.7 kg 17 lb	Dia 191 x 864 mm Dia 7.5 x 34 in	TBC
CP-MG-20	HP 20D2	70 x 76 x 1518 mm 2.75 x 3 x 59.75 in	9.1 kg 20 lb	Dia 127 x 1676 mm Dia 5 x 66 in	TBC
CP-MG-32	HP 32D5	140 x 127 x 521 mm 5.5 x 5 x 20.5 in	14.5 kg 32 lb	Dia 203 x 711 mm Dia 8 x 28 in	TBC
CP-MG-32	HP 32D3	89 x 95 x 1149 mm 3.5 x 3.75 x 45.25 in	14.5 kg 32 lb	Dia 165 x 1346 mm Dia 6.5 x 53 in	TBC
CP-MG-40	HP 40D3	89 x 95 x 1518 mm 3.5 x 3.75 x 59.75 in	18.1 kg 40 lb	Dia 165 x 1676 mm Dia 6.5 x 66 in	TBC
CP-MG-48	HP 48D5	140 x 146 x 787 mm 5.5 x 5.75 x 31 in	21.8 kg 48 lb	Dia 203 x 965 mm Dia 8 x 38 in	TBC
CP-MG-60	HP 4x4x60	102 x 102 x 1524 mm 4 x 4 x 60 in	27.2 kg 60 lb	Dia 178 x 1626 mm Dia 7 x 64 in	TBC

Note: All weights and dimensions are nominal. Each cell shows metric above, imperial below. Packaged gross weight for the HP series is supplied on confirmation of order because it depends on backfill bulk density and the customer package specification. Anodes may be purchased bare or in backfill.

PAGE 7 - SUPPLY & ORDERING

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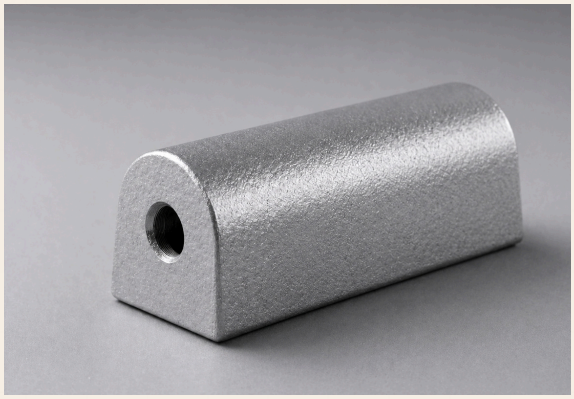
Ordering Information & Customization

Supply Configuration

Configuration	Description
Bare Anode	Cast magnesium anode supplied without backfill package
Prepackaged Anode	Anode supplied with cable, backfill mixture, cotton bag, and packing
Custom Casting	Anode shape, core size, and dimensions according to customer drawing



Ordering Information

To confirm the correct high potential magnesium anode specification, please provide the following information when requesting a quotation:

- Required model number or anode weight and shape
- Alloy grade or applicable standard, such as ASTM B843-M1C
- Bare anode or prepackaged anode requirement
- Cable type, cable size, and cable length
- Backfill requirement and package weight
- Drawing or dimensional requirements
- Required test reports and inspection documents
- Destination port and delivery terms

PAGE 8 - CUSTOMIZATION & DOCUMENTS

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Customization Options

Customization Options

Option	Available Customization
Anode Body	Custom weight, D-shape, trapezoidal shape, or drawing-based casting
Steel Core / Insert	Custom core dimensions and connection position
Cable Assembly	Custom cable size, cable type, cable length, and sealing method
Backfill Package	Custom backfill weight, cotton bag, and project-approved packing
Marking	Project-specific labels, model numbers, and traceability marking
Documentation	Special inspection, certificate, and technical documentation package

Available Documents

Test & Inspection Documents

- Chemical composition report
- Open circuit voltage test report
- ASTM G97 test report upon request
- Dimension inspection record
- Weight inspection record

Shipment Documents

- Certificate of conformity
- Packing inspection record
- Cable connection inspection record
- Material test certificate upon request
- Project-specific documentation package

PAGE 9 - QUALITY CONTROL

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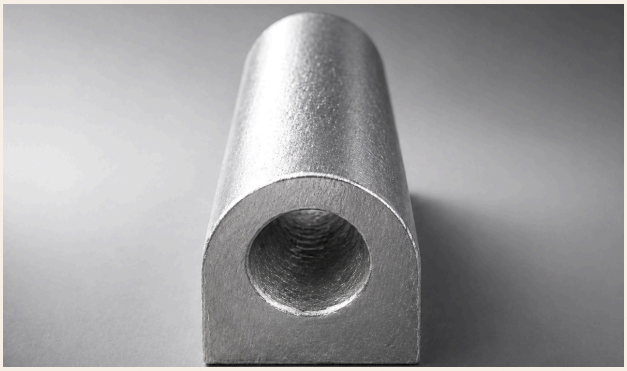
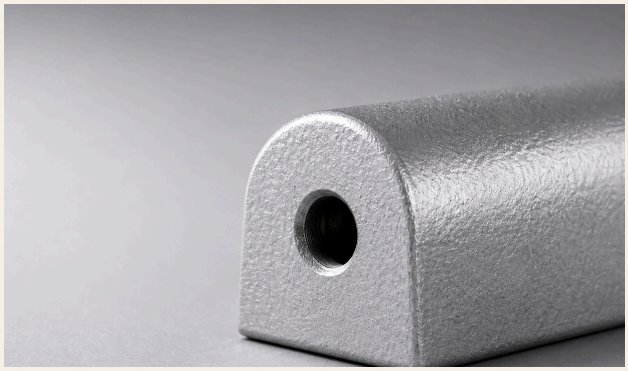
Quality Control, Packing & Contact

Quality Control

Inspection Item	Control Purpose
Chemical Composition	To verify magnesium alloy material conformity
Open Circuit Voltage	To confirm high potential anode performance
Current Efficiency Test	To verify electrochemical performance when required
Dimension Inspection	To confirm shape and size conformity
Weight Inspection	To confirm net weight and shipment quantity
Steel Core / Insert Inspection	To confirm connection structure and position
Cable Connection Inspection	To confirm connection strength and sealing quality
Surface Condition	To check casting appearance and visible defects
Backfill Package Inspection	To confirm package condition and filling quality
Label and Marking	To support traceability and project identification





PAGE 10 - PACKING & CONTACT

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Packing Options

Packing Options

- Bare anode on pallet
- Prepackaged anode in cotton bag
- Wooden case packing
- Palletized packing
- Export wooden case
- Project-specific labeling and marking

Handling and Storage

- Store in a dry and ventilated area before installation.
- Avoid moisture damage to prepackaged anode assemblies before use.
- Avoid strong mechanical impact during transportation and handling.
- Keep product identification labels visible for traceability.
- Do not damage cable connection or sealing area during handling.
- Follow project-approved installation procedures and cathodic protection design requirements.

Company Information

Jiaozuo Huayu Magnesium Co., Ltd.

Revision

Revision History: Rev. A | 2026-04-29 | Updated HP series anode and package dimensions; replaced old model references with CathPro model codes.