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		EDOPEC ENERJİ PETROL MÜHENDİSLİK SANAYİİ VE TİCARET LİMİTED ŞİRKETİ										
		Document Title MG ANODE DATA SHEET- EDO-XLB-XXMG										
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Magnesium Sacrificial Anodes

Magnesium anodes are employed in many sacrificial anode systems, due to their light weight and high output ratings. They are an economical choice for underwater or underground applications, especially in environments with high electrical resistance.

EDOPEC magnesium anodes come in a full array of shapes and sizes to fit any cathodic protection application. The underground anodes may be ordered bare or packaged, depending on your project specifications.

EDOPEC magnesium anodes are available for the following applications:

- Pipelines
- Underground tanks
- Condensers
- Heat exchangers
- Ship hulls
- Soil
- Piers & Pilings



Chemical Composition

EDOPEC Magnesium anodes are available in Hi- potential and standard grades(H-1 Grade, Grade II, Grade III) with the chemical composition as following:

MAGNESIUM CHEMICAL COMPOSITION				
Element	EDO-XXLB – HPMG Hi-Potential	EDO-XXLB- H1MG-H-1 Grade	EDO-XXLB- H2MG Grade II	EDO-XXLB-H2- MG Grade III
Al	0.010% max	5.0 - 7.0%	5.3 - 6.7%	5.3 - 6.7%
Mn	0.50 - 1.30%	0.15% min	0.15% min	0.15% min
Zn	0.05% max	2.0 - 4.0%	2.5 - 3.5%	2.5 - 3.5%
Si	0.05% max	0.30% max	0.30% max	0.10% max
Cu	0.02% max	0.1% max	0.05% max	0.02% max
Ni	0.001% max	0.003% max	0.003% max	0.002% max
Fe	0.001% max	0.001% max	0.001% max	0.001% max
Other	0.05% each	0.30% max	0.30% max	0.30% max
	or 0.30% total			
Magnesium	Remainder	Remainder	Remainder	Remainder



High potential magnesium anodes are used to protect buried metallic

structures found in a range of soil resistivity's.

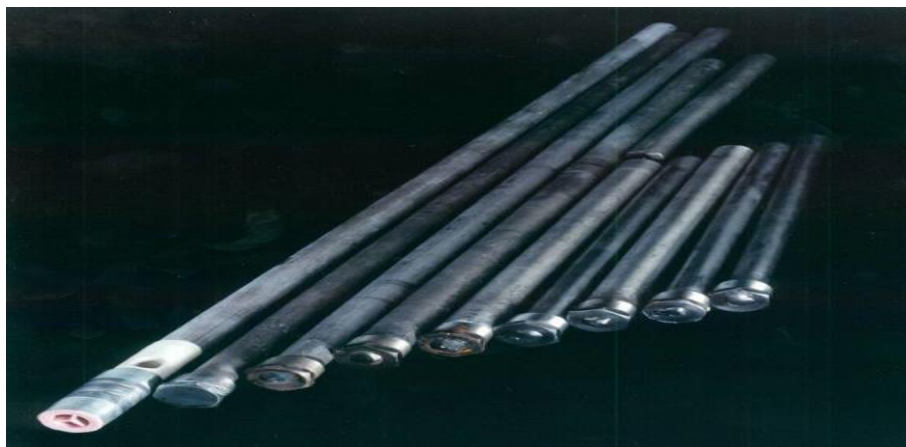
High Potential anodes cast from high-purity magnesium, produce an open circuit potential of 1.70 volts, which is 20.3 percent greater than conventional magnesium anodes. This high driving voltage means greater protection can be delivered from fewer anodes. Efficiency of the anode is enhanced even further when installed in a backfill of 75% gypsum, 20% bentonite, and 5% sodium sulfate. This

special mixture lowers anode-to- earth resistance, and allows electrical current to flow more easily to the targeted structure.

Soil Anode Dimensions

Anode Type	Bare Weight,kg	Packaged Weight,kg	Bare Anode Size-SI				
			A	B	C	D	E
EDO-3LB-XXX	1,36	4,08	70 mm	60 mm	220 mm	160 mm	350 mm
EDO-3,5 LB-XXX	1,50	6,00	60 mm	70 mm	255 mm	160 mm	370 mm
EDO-5LB-XXX	2,27	8,00	70 mm	60 mm	300 mm	160 mm	440 mm
EDO-6,5 LB-XXX	2,96	11,00	60 mm	70 mm	440 mm	160 mm	500 mm
EDO-9LB-XXX	4,08	10,89	100 mm	100 mm	250 mm	170 mm	430 mm
EDO-10LB-XXX	4,55	16,00	100 mm	100 mm	320 mm	170 mm	440 mm
EDO-11LB-XXX	4,99	16,33	100 mm	100 mm	350 mm	170 mm	500 mm
EDO-17LB-XXX	7,71	19,05	100 mm	100 mm	540 mm	180 mm	740 mm
EDO-20LB-XXX	9,07	31,75	100 mm	100 mm	620 mm	180 mm	800 mm
EDO-22LB-XXX	9,98	29,94	140 mm	140 mm	340 mm	200 mm	530 mm
EDO-32LB-XXX	14,51	35,00	140 mm	140 mm	500 mm	200 mm	640 mm
EDO-44LB-XXX	19,96	60,33	127 mm	120 mm	990 mm	200 mm	1130 mm
EDO-48LB-XXX	21,77	43,54	127 mm	120 mm	1090 mm	200 mm	1250 mm

For low current requirement applications such as gas distribution risers, drive-in magnesium anodes are an economical choice. Anodes are manufactured from extruded magnesium rods, fitted with a special steel driving cap.



Pre-packaged Magnesium Anodes

EDOPEC's magnesium anodes come in a full array of shapes and sizes to fit any cathodic protection application. The underground anodes may be ordered bare or packaged, depending on your project specifications. Magnesium anodes for buried pipelines, casings, tanks and similar structures are supplied packaged in a cotton bag containing backfill. The backfill powder reduces the soil resistivity surrounding the anodes and improves the anode performance.

Standard backfill composition

Powdered Gypsum	: 75%
Granular Bentonite	: 20%
Sodium Sulphate	: 5%

Chemical Composition of High Potential Mg Anode

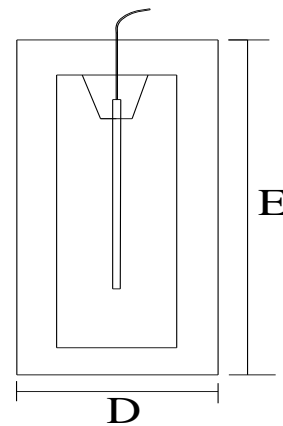
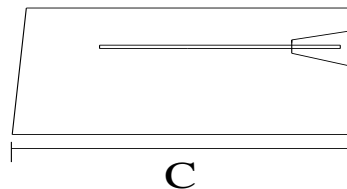
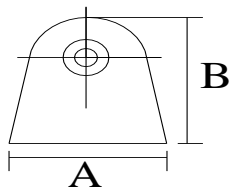
Element	Content, wt%
Aluminum	Max 0.01
Manganese	0.5 – 1.3
Zinc	-
Silicon	Max 0.05
Copper	Max 0.02
Nickel	Max 0.001
Iron	Max 0.0013
Other total	Max 0.30
Magnesium	Reminder

Electrochemical Properties

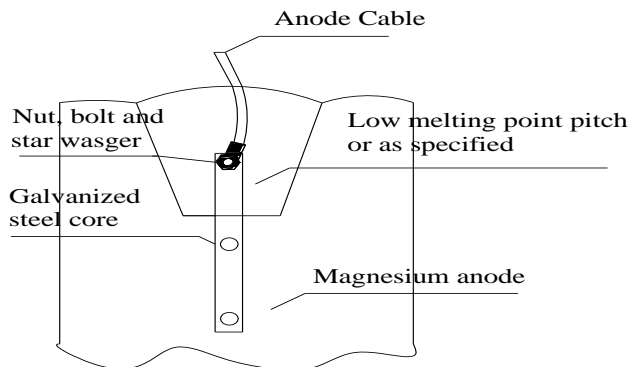
Type	High Potential
OCP (V vs. Ag/AgCl)	- 1.70
Max Current Capacity	1100 Ah/Kg

Typical dimensions and Size

Bare Weight, lb	Packaged Weight, lb	Bare			Packaged	
		A	B	C	D	E
17	40	100 mm	100 mm	540 mm	180 mm	740



Typical able and Connections



Cable type	1×10 sqr mm XLPE/PVC
Cable length	3 Meter

Cable Connection Properties

Cable connection Tensile Strength	≥ 100 kgf
Cable Connection Electrical Resistance	≤ 0.01 ohm