

# MAGNA 100 AC-DC

## FEATURES:

Magna 100 is an exothermic coated electrode which has been designed for chamfering, grooving and gouging of almost all metals. It has the following properties:

- 1. Exothermic Reaction.** Magna 100 is composed of a core wire coated with a special heat producing coating. The coating has insulating materials so that it does not get over-heated even though the electrode is used at high amperages. The coating melts more slowly than the core wire and this forms a crucible at the tip of the electrode. The coating contains chemicals that create a gas of intense velocity when melted. The coating contains ceramic and heat resisting materials. When the electrode is used, an actual blowing action like a jet is created. The heat of the electrode melts the base metal and the high velocity gas over stream blows the molten metal away, leaving a clean kerf.
- 2. Special Core Wire.** Several companies have attempted to imitate Magna 100 using an ordinary cheap steel core wire. This wire contains amounts of carbon, sulphur and phosphorous which causes deep contamination of the base metal. On sensitive metals such as stainless steel this can be disastrous. The Magna 100 core wire is manufactured under strict control and hence all impurities are kept to an absolute minimum.
- 3. Use of Magna 100.** There are daily uses for this product in every maintenance department. It can be used for removing cracks and fractures in place of grinding before welding. It is excellent for removing unwanted welds, such as when removing lifting cleats and lugs, or for taking welded sections apart. It can be used for cutting grooves anywhere required.
- 4.** Magna 100 makes a U-shaped gouge which is ideal for welding. It does not seal a crack as oxyacetylene chamfering does.
- 5. Economy.** Magna 100 is much faster than oxyacetylene gouging and up to 10 times faster than a chipping gun for removing unwanted metal.

6. **Versatility.** Magna 100 can be used on nearly all metals including cast iron, manganese steel, bronze and stainless steel.
7. **Universal.** Magna 100 can be used with excellent results on any ordinary welding machine - AC or DC.

## APPLICATION

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AC or DC straight polarity welding machines may be used for Magna 100. Either machine is suitable so long as it has a minimum output of 250 amps.

Insert the electrode firmly into the holder and set the machine to the highest setting available. Strike an arc on a piece of scrap metal then, proceed to chamfer away the unwanted metal. Hold the Magna 100 at a very close angle to the base metal and actually push the electrode into the work surface and in the direction of travel.

## Recommended Amperage:

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### Electrode Diameter

Metric	Gauge	Inch.	Setting
3.2 mm.	10	1/8"	250 - 350 amps.
4.0 mm.	8	5/32"	275 - 400 amps.

Lower amperages may be used successfully, however, a higher amperage reading will remove more metal at a greater rate.

Magna 100 may be used for cutting and piercing applications.

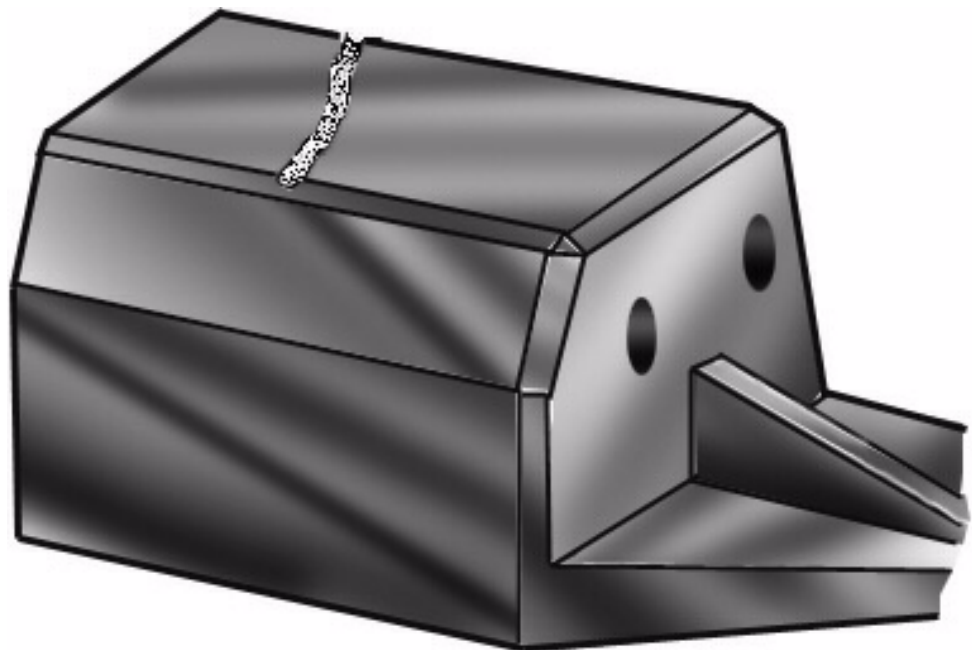
See over for a table showing how the angle of electrode can affect the amount of metal removed, the time taken and the durability of the electrode.

Effect of Angle of Inclination on the Efficiency of Magna 100 on 25 mm (1") Plate of Mild Steel.

Electrode Dia.	Angle of Inclination	Current	Time taken	Metal removed	Length of Groove per sec.	Electrode Consumption	Quantity of metal removed per kg electrode
mm. inch.	Degs.	Amp.	Secs.	Grams (lb.)	mm. inch.	mm. inch.	kg (lb.)
3.2 (1/8")	6	170	12	20(0.70)	572(22.5)	114(4.50)	0.58(1.27)
3.2 (1/8")	9	170	12	26(0.90)	572(22.5)	114(4.50)	0.74(1.64)
3.2 (1/8")	12	170	13	26(0.90)	617(24.3)	127(5.00)	0.74(1.64)
3.2 (1/8")	15	170	14	28(1.00)	600(23.6)	140(5.50)	0.68(1.49)
3.2 (1/8")	18	170	15	20(0.70)	584(23.0)	146(5.75)	0.45(1.00)
3.2 (1/8")	21	170	15	14(0.50)	610(24.0)	152(6.00)	0.31(0.68)
4.0 (5/32")	6	220	14	42(1.50)	381(15.0)	89(3.50)	1.10(2.43)
4.0 (5/32")	9	220	15	57(2.00)	381(15.0)	95(3.75)	1.38(3.03)
4.0 (5/32")	12	220	18	50(1.75)	381(15.0)	114(4.50)	1.00(2.20)
4.0 (5/32")	15	220	18	35(1.25)	401(15.8)	114(4.50)	0.68(1.50)
4.0 (5/32")	18	220	18	28(1.00)	424(16.7)	127(5.00)	0.52(1.14)
4.0 (5/32")	21	220	19	24(0.85)	442(17.4)	140(5.50)	0.50(0.88)

### MAGNA APPLICTION PROCEDURE - MAGNA 100

See how "jet blast" action of Magna 100 has efficiently gouged out the cracked and fatigued metal on this cast iron assembly, leaving a clean kerf ready for welding.



# SAFETY DATA SHEET



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Product No.: SDS-ID: GB-EN/3.1

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

Product name: Magna 100

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Application: Manual metal arc welding electrode.

### 1.3. Details of the supplier of the safety data sheet

Supplier: EU importer: Distributed by: Trust Engineering Company  
9 Abdel Hamid El Deeb Street  
Alexandria, 21613 Egypt  
T: +(20)3 5822779 T: +(20)10 1223554

Manufacturer: ITW PP & F Korea Limited.  
13th Fl., Unit B, PAX Tower  
609 Eonju-ro, Gangnam-gu  
Seoul, Korea 06108  
Tel:+82-2-2088-3560  
Fax:+82-2-513-3567  
magna@magnagroup.com  
www.magnagroup.com

5 Ahmed Shaker Street Fourth Zone  
Nasr City, 11586 Egypt  
T: +(20)2 26909965 T: +(20)10 1223553  
info@trustengineering-eg.com  
www.trustengineering-eg.com

Further information can be obtained from: magna@magnagroup.com

### 1.4. Emergency telephone number

Emergency telephone: Call a Poison Center, emergency number or doctor/physician. NHS: 111

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

CLP: The product is not classified.

### 2.2. Label elements

Solid metals and alloys do not require a hazard label if they do not present a danger to human health or the environment in the form in which they are placed on the market. The information which would have appeared on the label is shown here.

Safety data sheet available on request.

### 2.3. Other hazards

PBT/vPvB: This product does not contain any PBT or vPvB substances.

Other: Prolonged or repeated exposure to welding fumes may cause damage to the lungs and respiratory system. Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2. Mixtures

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Only classified substances above threshold limits or substances with an exposure limit are shown.  
All substances in the product are either registered or exempt from registration under REACH.

CLP:

%:	CAS-No.:	EC No.:	REACH Reg. No:	Chemical name:	Hazard classification:	Notes:
60-100	7439-89-6	231-096-4	-	Iron	-	#
10-30	9004-34-6	232-674-9	-	Cellulose	-	
1-5	1312-76-1	215-199-1	-	Silicic acid, potassium salt	Met. Corr. 1;H290 Skin Corr. 1B;H314 Eye Dam. 1;H318 STOT SE 3;H335	SCL
5-10	1344-09-8	215-687-4	-	Silicic acid, sodium salt	Met. Corr. 1;H290 Skin Corr. 1B;H314 Eye Dam. 1;H318 STOT SE 3;H335	SCL
5-10	7439-96-5	231-105-1	-	Manganese	-	#
1-5	1309-37-1	215-168-2	-	Diiron trioxide	-	#

Notes:

SCL: Specific Concentration Limit

#: The substance has been assigned an exposure limit.

References:

The full text for all hazard statements is displayed in section 16.

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

Inhalation: Inhalation of welding fumes: Move into fresh air and keep at rest. In case of persistent throat irritation or coughing: Seek medical attention and bring these instructions.

Skin contact: Remove contaminated clothes and rinse skin thoroughly with water.

Eye contact: Do not rub eye. If irritation occurs during dust-raising work, flush with plenty of water for at least 15 minutes.

Ingestion: Not likely, due to the form of the product.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects: Exposure to dust and fumes of some metal oxides may result in metal fume fever with flu-like symptoms occurring in 4-12 hours. See section 11 for more detailed information on health effects and symptoms.

### 4.3. Indication of any immediate medical attention and special treatment needed

Medical attention/treatments: Treat symptomatically.

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## SECTION 5: FIREFIGHTING MEASURES

### **5.1. Extinguishing media**

Extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

### **5.2. Special hazards arising from the substance or mixture**

Specific hazards: During fire, gases hazardous to health may be formed.

### **5.3. Advice for firefighters**

Protective equipment for fire-fighters: Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### **6.1. Personal precautions, protective equipment and emergency procedures**

Personal precautions: Follow precautions for safe handling described in this safety data sheet.

### **6.2. Environmental precautions**

Environmental precautions: The product should not be dumped in nature but collected and delivered according to agreement with the local authorities.

### **6.3. Methods and material for containment and cleaning up**

Methods for cleaning up: Not relevant.

### **6.4. Reference to other sections**

References: For personal protection, see section 8.  
For waste disposal, see section 13.

## SECTION 7: HANDLING AND STORAGE

### **7.1. Precautions for safe handling**

Safe handling advice: When welding: Do not breathe fumes. Observe good chemical hygiene practices.

Technical measures: No special precautions.

Technical precautions: When welding: Mechanical ventilation may be required.

### **7.2. Conditions for safe storage, including any incompatibilities**

Technical measures for safe storage: No special precautions.

Storage conditions: Store in closed original container in a dry place.

### **7.3. Specific end use(s)**

Specific use(s): Welding material

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

Occupational exposure limits:

<u>CAS-No.:</u>	<u>Chemical name:</u>	<u>As:</u>	<u>Exposure limits:</u>	<u>Type:</u>	<u>Notes:</u>	<u>References:</u>
13463-67-7	Titanium dioxide, total inhalable dust	-	10 mg/m <sup>3</sup>	TWA	-	EH40
-	Manganese and its inorganic compounds, inhalable fraction	Mn	0.2 mg/m <sup>3</sup>	TWA	-	EH40
-	Manganese and its inorganic compounds, respirable fraction	Mn	0.05 mg/m <sup>3</sup>	TWA	-	EH40
1309-37-1	Iron oxide, fume	Fe	5 mg/m <sup>3</sup>	TWA	-	EH40
		-	10 mg/m <sup>3</sup>	STEL	15min	
9004-34-6	Cellulose, inhalable dust	-	10 mg/m <sup>3</sup>	TWA	-	EH40
		-	20 mg/m <sup>3</sup>	STEL	15min	
9004-34-6	Cellulose, respirable dust	-	4 mg/m <sup>3</sup>	TWA	-	EH40
13463-67-7	Titanium dioxide, respirable dust	-	4 mg/m <sup>3</sup>	TWA	-	EH40

Notes: EH40: EH40/2005.

DNEL/PNEC: No information available.

### 8.2. Exposure controls

Engineering measures: When welding: Provide adequate ventilation. Observe Occupational Exposure Limits and minimise the risk of inhalation of dust and fumes.

Personal protection: Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.  
When welding: Use special welding equipment for protection of eyes, skin and respiratory system.

Hygiene measures: Wash hands after handling. Change contaminated clothing.

Environmental Exposure Controls: Not available.

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

Appearance: Wire with a flux coating.

Odour: Not available.

Odour threshold: Not available.

pH: Not available.

Melting point / freezing point: 1000-1500°C

Boiling point: Not available.

Flash point: Not available.

Evaporation rate: Not available.

Explosive limits Not available.

Vapour pressure: Not available.

Vapour density: Not available.

Relative density: 5-8

Solubility: Insoluble in water

Partition coefficient (n-octanol/water): Not available.

Auto-ignition temperature (°C): Not available.

Decomposition temperature (°C): Not available.

Viscosity: Not available.

Oxidising properties: Not available.

### 9.2. Other information

Other data: Not available.

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## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

Reactivity: None known.

### 10.2. Chemical stability

Stability: Stable under normal temperature conditions and recommended use.

### 10.3. Possibility of hazardous reactions

Hazardous Reactions: None known.

### 10.4. Conditions to avoid

Conditions to avoid None specific. None known.

### 10.5. Incompatible materials

Incompatible materials: Water, moisture. Avoid contact with acids.

### 10.6. Hazardous decomposition products

Hazardous decomposition products: None under normal conditions.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on toxicological effects

Acute Toxicity (Oral): Based on available data, the classification criteria are not met.

Acute Toxicity (Dermal): Based on available data, the classification criteria are not met.

Acute Toxicity (Inhalation): Based on available data, the classification criteria are not met.

Skin Corrosion/Irritation: Based on available data, the classification criteria are not met.

Serious eye damage/irritation: Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive Toxicity: Based on available data, the classification criteria are not met.

STOT - Single exposure: Based on available data, the classification criteria are not met.

STOT - Repeated exposure: Based on available data, the classification criteria are not met.

Aspiration hazard: Based on available data, the classification criteria are not met.

Inhalation: Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain.

Skin contact: Not relevant.

Eye contact: When welding: Irritating and may cause redness and pain.

Ingestion: Not likely, due to the form of the product.

Specific effects: Prolonged or repeated exposure to welding fumes may cause damage to the lungs and respiratory system.

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## SECTION 12: ECOLOGICAL INFORMATION

### **12.1. Toxicity**

Ecotoxicity: Not regarded as dangerous for the environment.

### **12.2. Persistence and degradability**

Degradability: This product mainly consists of inorganic compounds which are not biodegradable. The remaining compounds of the product are expected to be not readily biodegradable.

### **12.3. Bioaccumulative potential**

Bioaccumulative potential: No data available on bioaccumulation.

### **12.4. Mobility in soil**

Mobility: Not relevant, due to the form of the product.

### **12.5. Results of PBT and vPvB assessment**

PBT/vPvB: No data available.

### **12.6. Other adverse effects**

Other adverse effects: None known.

## SECTION 13: DISPOSAL CONSIDERATIONS

### **13.1. Waste treatment methods**

Dispose of waste and residues in accordance with local authority requirements. Waste is classified as hazardous waste.

Waste from residues: EWC-code: 12 01 13

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## SECTION 14: TRANSPORT INFORMATION

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

### **14.1. UN number**

UN-No: -

### **14.2. UN proper shipping name**

Proper Shipping Name: -

### **14.3. Transport hazard class(es)**

Class: -

### **14.4. Packing group**

PG: -

### **14.5. Environmental hazards**

Marine pollutant: -

Environmentally Hazardous substance: -

### **14.6. Special precautions for user**

Special precautions: Not relevant.

### **14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code**

Transport in bulk: Not relevant.

## SECTION 15: REGULATORY INFORMATION

### **15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

National regulation: Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, with amendments.  
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments.  
The Control of Substances Hazardous to Health Regulations 2002 (S.I. 2002 No. 2677) with amendments.  
EH40/2005, Workplace exposure limits 2005, with amendments.  
The List of Wastes (England) (Amendment) Regulations 2005. (SI 2005 No. 895).  
The Management of Health and Safety at Work Regulations 1999 (SI 1999 No. 3242), with amendments.

### **15.2. Chemical Safety Assessment**

CSA status: No chemical safety assessment has been carried out.

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## SECTION 16: OTHER INFORMATION

The user must be instructed in the proper work procedure and be familiar with the contents of these instructions.

The following sections contain revisions or new statements: 1, 2, 3, 8, 11, 14, 15, 16.

Magna Welding Alloys  
13th Fl., Unit B, PAX Tower,  
609, Eonju-Ro, Gangnam-Gu, Korea 06108  
Tel : +82-2-2088-3560  
Fax : +82-2-513-3567  
Web site : [www.magnagroup.com](http://www.magnagroup.com)

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Abbreviations and acronyms PBT = Persistent, Bioaccumulative and Toxic.  
used in the safety data sheet: vPvB = very Persistent and very Bioaccumulative.

Additional information: Classification according to Regulation (EC) No. 1272/2008: Calculation method.

### Wording of H-statements:

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.

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The information on this data sheet represents our current data and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product which involves using the product in combination with any other product or any other process is the responsibility of the user.

Made by DHI - Environment and Toxicology, Ager Allé 5, DK-2970 Hørsholm, Denmark.  
[www.dhigroup.com](http://www.dhigroup.com).