

MAGNA 480 AC-DC

A special, All-Purpose Tool, Die & Mould Steel Electrode, Magna 480 features a specially-alloyed, all-mineral Magna coating to provide wear-resistant surfaces for hot-and cold-working tool steels in hardened and tempered condition.

Magna 480 features a coefficient of expansion and contraction virtually identical to SKD-11 type steels, without cracking or the need for special pre-weld and postweld heat treatment.

VERSATILE:

Magna 480 successfully welds all the commonly-used steels used for tools, dies and moulds- hot-or cold-working, oil-, air- or water-hardening. This electrode welds and rebuilds even "difficult" AISI: D2, A2, S1, H13 and L6 tool steels. This gives Magna 480 one-product, universal tool steel application capabilities unmatched by any other electrode for high-grade steels.

EASE OF USE:

With Magna 480, even the tough-to-weld SKD-11 or similar type tool-steels can be welded without the cracking problems that affect the heat-affected zone near the weld area. Only a low degree of preheating (250° - 300°C) is required, depending on the tempering treatment of the type of steel welded.

Due to low current welding requirements, Magna 480 can be used even with low-powered AC welding machines.

SUPERIOR AS-WELDED HARDNESS:

As welded, Magna 480 provides a hardness of 57-59 Rockwell 'C', without heat treatment. The weld provides extraordinary wear resistance to impact and abrasion under both hot- and ambient working conditions.

Even at temperatures up to 500°C, the deposit provides a minimum of 53RC hardness. This gives Magna 480 the practical ability to resist cracking even under adverse and rapidly-changing "in use" applications. Magna is therefore eminently suited for hot work applications.

APPLICATIONS:

Magna 480 is recommended for repairing and/or hardfacing hot- and cold-trimming dies, forming and blanking dies, hot and cold shear blades, including hot billet shears, blanking, punching and coining tools, rotary shear knives and both hot - and cold-forming and deep-drawing dies.

Magna 480 is also suitable for welding lower grades of tool steels, such as mild steel and other high carbon steels.

APPLICATION

Preheat all tool, die & mould steels to 250-300°C. This aids in preventing cracking of the base metal during welding.

With most overlay electrodes for tool steels, peening is absolutely necessary during welding to stress-relieve the weld. However, due to Magna 480's advanced matrix system, peening is not normally required under general welding conditions, if the above suggested preheating of the base steel is performed.

When welding on applications where preheating is not advisable, such as on minor repairs on cutting edges, shearing knives and cold trimmers, peening is advised.

NO TEMPERING FEATURE:

As welded, Magna 480 achieves a 57-59 Rockwell 'C' (HRC) hardness. In its second layer, it will provide a 58 HRC on SKD-11 steels. Should more uniform hardness be required, Magna 480 can be tempered at 550°C for one hour. However, under normal conditions, no time-consuming tempering is required.

FINISHING:

Magna 480 is easily finished to desired dimensions either by grinding or by using the spark-erosion process, where final finishing is required.

Low welding current is preferred to minimize dilution and heat input.

Recommended Welding Current:

	SIZE		SETTING
	1/8"	-(3.2mm) -10g	: 80-100 amps

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Product No.:

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SDS-ID: GB-EN/4.0

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

1.1. Product identifier

Product name: Magna 480

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

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

1.4. Emergency telephone number

Emergency telephone: NHS: 111

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

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

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

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The product contains: metal and Coating.

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	-	#
5-10	7440-47-3	231-157-5	-	Chromium	-	#
5-10	7440-21-3	231-130-8	-	Silicon	-	#
1-5	7439-98-7	231-107-2	-	Molybdenum	-	#
1-5	12070-12-1	235-123-0	-	Tungsten carbide	-	
1-5	583-52-8	209-506-8	-	Dipotassium oxalate	Acute Tox. 4;H302 Acute Tox. 4;H312	
1-5	7440-33-7	231-143-9	-	Tungsten and compounds insoluble	-	

Notes: #: The substance has been assigned an exposure limit.

References: The full text for all R-phrases and hazard statements are 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: 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. 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: Not known.

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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: Spillage should be collected for recycling.

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): Not relevant.

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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>
1317-65-3	Limestone, respirable dust	-	4 mg/m3	TWA	-	EH40
-	Chromium (III) compounds	Cr	0.5 mg/m3	TWA	-	EH40
-	Chromium (II) compounds	Cr	0.5 mg/m3	TWA	-	EH40
-	Chromium (VI) compounds	Cr	0.05 mg/m3	TWA	Carc; Sen	EH40
-	Tungsten and insoluble compounds	W	5 mg/m3	TWA	-	EH40
-		-	10 mg/m3	STEL	15min	
-	Fluoride (inorganic)	F	2.5 mg/m3	TWA	-	EH40
-	Iron oxide, fume	Fe	5 mg/m3	TWA	-	EH40
-		-	10 mg/m3	STEL	15min	
7440-21-3	Silicon, respirable dust	-	4 mg/m3	TWA	-	EH40
7440-47-3	Chromium	-	0.5 mg/m3	TWA	-	EH40
1317-65-3	Limestone, total inhalable dust	-	10 mg/m3	TWA	-	EH40

Notes: EH40: EH40/2005.

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: Not available.

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: Not available.

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.

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 classified as dangerous to the environment.

12.2. Persistence and degradability

Degradability: The product solely consists of inorganic compounds which are not biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential: No data available on bioaccumulation.

12.4. Mobility in soil

Mobility: No data available.

12.5. Results of PBT and vPvB assessment

PBT/vPvB: Not relevant.

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

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.

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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).

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: 2, 3, 6, 8, 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

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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:

H302 Harmful if swallowed.
H312 Harmful in contact with skin.

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, Agern Allé 5, DK-2970 Hørsholm, Denmark.
www.dhigroup.com.
