MAGNA 720

DESCRIPTION:

Magna 720 AC –DC is a special electrode for welding dirty, greasy, burnt cast irons where removal of contamination is difficult.

ADHERENCE TO DIRTY CAST IRON:

There are occasions in industry where exceedingly dirty cast iron is encountered. Examples are oil-soaked castings, chemically-soaked castings and iron impregnated with other contaminants. An ideal solution would be to soak the casting in an appropriate chemical degreasing or cleaning solution for many hours and then bake the casting. Unfortunately the pressures of maintenance often will not allow these timely cleaning procedures to be carried out.

Magna 770, which bonds exceedingly well to most dirty cast iron, does have a limitation. Since Magna 770 has controlled penetration, which is ideal for machinability and non-cracking reasons, it may not be able to bond well on exceptionally dirty cast irons. (These cases are in the minimum, but they do exist).

Magna 720 should be used instead. It has a high penetration and can anchor deep down into the subsurface of dirty cast iron to find a “foothold” and “grab” the dirty iron. Magna 720 is used for a cladding operation. Then the weld is completed with Magna 770 for maximum strength, ductility and machinability. The hard bonding layer formed by the deep penetration of Magna 720 is in the main annealed out with the subsequent passes of Magna 770.

BURNT CAST IRON:

Likewise, with such structures as furnace grates, the long periods of heating will have burned the exterior to where it cannot normally be welded. However, Magna 720 penetrates deep into burnt iron and provides a strong anchoring weld.

UTILITY WELD:

There are many applications when neither machinability nor high ductility is necessary. Examples are machine bases, foundry flaws, and utility cast iron welding. Magna 720 serves these purposes.

The novel coating chemistry of Magna 720 enables the electrode to be applied at very low current densities and yet make an excellent connection with the base metal. A highly stable arc occurs and the electrode demonstrates remarkably high resistance to

cracking. The welding characteristics are so outstanding that even complicated castings which are liable to stress can be welded reliably using normal care. Magna 720 can be applied to different types of castings including grey, nodular (SG), malleable cast irons. Typical applications are: furnace gates, oil saturated cast iron, foundry casting repairs, steel to cast iron, and ornamental iron fabrication.

SPECIAL FEATURES:

1. Rapid Solidification. Magna 720 has such a rapid solidification that the weld freezes before porosity or flaws can form on dirty cast iron. This rapid solidification also makes vertical and overhead welding easy since no dripping occurs.

2. Ability to Bond to Dirty Cast iron. Magna 720 can bond readily to greasy or dirty cast iron. It seals off the contamination so that sound welding can proceed. It can readily form strong bonds even on heat affected cast iron. It penetrates through the affected outer surface and bonds to the sound metal underneath.

3. Built-in Carbon Diffusion. When most ordinary electrodes are applied to cast iron, a heavy area of carbon is formed at the interface. Magna 720 has the ability to diffuse the surface carbon evenly throughout the weld metal. This prevents the brittle interface area so common with ordinary cast iron electrodes.

4. Co-efficient of Expansion. Magna 720 has a similar co-efficient of expansion to cast iron. It is a perfect color match to cast iron and will rust like cast iron.

APPLICATION:

Magna 720 welds successfully without preheating. However, on large components preheating is desirable.

Use Magna 100 to completely gouge out cracks or any signs of metal fatigue. So cracks will not scatter, ensure every trace is drilled out before commencement of weld. Drill a hole 1/2" from each end of the crack to prevent crack from propagating.

Lightly preheat to approximately 400°F to prevent stress cracking and apply Magna 720 using lowest possible current setting and a short arc. Tack weld long seams at 2" intervals. Each pass should be lightly hammered before metal cools to reduce stress.

Allow weld to cool slowly under normal conditions.

RECOMMENDED AMPERAGES:

Metric	Inches	Gauge	Setting
3.2 mm.	1/8	10	70-110 amps

SAFETY DATA SHEET

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

1.1. Product identifier

Product name: Magna 720

Container size: 2 kg, 4 kg

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
info@trustengineering-eg.com
www.trustengineering-eg.com

Manufacturer:

Manufacturer:
Magna Welding Alloys
(The Magna Trade Mark is the property of ITW Inc., and is used under license by ITW PP & F Korea Limited.)

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.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Only classified substances above threshold limits are shown.
All substances in the product are either registrered 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	01-2119462838-24-XXXX	Iron	-	#
5-10	7789-75-5	232-188-7	17-2119399297-20-XXXX	Calcium fluoride	-	#
5-10	513-77-9	208-167-3	01-2119489177-25-XXXX	Barium carbonate	Acute Tox. 4;H302	
5-10	1317-65-3	215-279-6	-	Limestone	-	#
1-5	7439-96-5	231-105-1	01-2119449803-34-XXXX	Manganese	Aquatic Chronic 3;H412	
1-5	7782-42-5	231-955-3	01-2119486977-12-XXXX	Graphite	-	#

Notes: #: The substance has been assigned an exposure limit. See section 8.

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

When welding: Seek medical attention for all burns, regardless how minor they may seem.

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. If material is hot, treat for thermal burns and get immediate medical attention.

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: Treat symptomatically.

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

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits:

CAS-No.:	Chemical name:	As:	Exposure limits:	Type:	Notes:	References:
513-77-9	Barium compounds, soluble	Ba	0.5 mg/m3	TWA	-	EH40
-	Iron oxide, fume	Fe	5 mg/m3	TWA	-	EH40
		-	10 mg/m3	STEL	15min	
1317-65-3	Limestone, total inhalable dust	-	10 mg/m3	TWA	-	EH40
1317-65-3	Limestone, respirable dust	-	4 mg/m3	TWA	-	EH40
7782-42-5	Graphite, respirable dust	-	4 mg/m3	TWA	-	EH40
7782-42-5	Graphite, inhalable dust	-	10 mg/m3	TWA	-	EH40
7439-96-5	Manganese and its inorganic compounds	Mn	0.5 mg/m3	TWA	-	EH40
-	Fluoride (inorganic)	F	2.5 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 relevant 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.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance:	Wire with a flux coating.
Odour:	Not available.
pH:	Not applicable.
Melting point / freezing point:	>1000°C
Boiling point:	Not applicable.
Flash point:	Not available.
Evaporation rate:	Not applicable.
Flammability (solid, gas):	Not available.
Vapour pressure:	Not applicable.
Vapour density:	Not applicable.
Solubility:	Insoluble in water
Partition coefficient (n-octanol/water):	Not applicable.
Auto-ignition temperature (°C):	Not available.
Decomposition temperature (°C):	Not available.
Viscosity:	Not applicable.

9.2. Other information

Other data:	Not available.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity:	Not reactive.

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 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:	The molten product can cause serious burns.
Eye contact:	Particles/fumes in the eyes may cause discomfort/irritation.
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.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity: Not regarded as dangerous for 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: Not considered mobile.

12.5. Results of PBT and vPvB assessment

PBT/vPvB: Not Classified as PBT/vPvB by current EU criteria.

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 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: -

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

Transport in bulk: -

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: Not relevant.

SECTION 16: OTHER INFORMATION

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

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Abbreviations and acronyms used in the safety data sheet:	PBT = Persistent, Bioaccumulative and Toxic. vPvB = very Persistent and very Bioaccumulative.
Key literature references and sources for data:	None.
Additional information:	None.
Wording of H-statements:	
H302	Harmful if swallowed.
H412	Harmful to aquatic life with long lasting effects.

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.