

MAGNA 777 AC-DC

Generation II Machinable Electrode for Cast Iron

Magna 777 is a totally new type of cast iron electrode that utilizes a highly advanced "Twin Core " fabrication process that totally eliminates the chances of the electrode overheating when used under AC - even under difficult amperage loading conditions.

This advanced feature enables superior economy for the user as the electrode can be totally used and does not have to be discarded through overheating. In addition, the unique temperature control characteristic of the Magna 777 Twin Core design provides a more even heat output and molten metal flow to improve the integrity of the weldment and virtually eliminate weld spatter.

TOTAL FLUSHING/CLEANING ACTION

Magna 777's superior flux chemistry also provides for total and highly effective flushing away of surface contaminants, such as oil, rust, paint encrustation, etc., from the cast iron surface to improve the bonding of the molten weld to provide strong, secure and mechanically sound welds on virtually all types, grades and gauges of cast iron.

Special supplements successfully assist in the suppression of cementite formation during welding and helps Magna 777 achieve and retain full machinability, even on difficult grades of cast iron. In addition, powerful in-built amalgams help clean the surface out of all potentially weld-damaging chemicals and their derivatives and hold these to the exterior of the weldment for easy subsequent removal as part of the weld slag.

UNIQUE MAGNA 777 "THUNDERSTIK" CONTROLLED BLAST ACTION

Magna 777 "Thunder Stik" applies with a novel "controlled blast" pulse that actually provides a cohesive twin phase process:

I INITIAL (CONTINUOUS ACTION) PHASE

Magna 777 "Thunder Stik" strikes with a powerful cleansing arc that flushes and burns off all contaminants in and around the weld area and burns off any scaling or oxides from the immediate vicinity of the arc. The powerful arc carves

out a sound surface and lays on a molten pool of weld metal in preparation for the second continuous phase of Magna 777 "ThunderStik's" arc action.

II. SECONDARY (CONTINUOUS ACTION) PHASE

The Initial Phase of molten metal transfer is reduced yet maintained and keeps the weld area in a molten state while a continuous burn-off of impurities takes place. The formation of blow holes and pin holes is eliminated by this process and the reduced rate of molten metal transfer across the secondary phase's arc helps pre-heat the base metal to prevent martensitic formation within the Heat Affected Zone (HAZ) for dramatically improved machineability.

The arc then reverts back to the initial phase, followed by the secondary phase, etc., on a continuously alternate basis. This "controlled blast" pulse of Magna 777 "ThunderStik" provides an exceptionally sound, strong and yet fully machinable weldment.

BUILT-IN EASE OF USE

Magna 777 "ThunderStik" can be applied using even the small, portable AC welding machines or on DC straight polarity. Where the piece to be welded is not restrained (i.e. free to expand and contract), no peening between passes is required. The weld laid by Magna 777 "ThunderStik" is easily machinable and highly crack-resistant, and can be applied on most types of cast iron-including grey, nodular and malleable. Magna 777 "Thunder Stik" can also be used to weld cast iron onto steel parts with superior weld strength and weld integrity !!!

Magna 777 "Thunder Stik" also welds ductile iron, "Ni-Resist" and "Meehanite", even onto steel, and provides good weldability of nickel alloys even onto cast steel.

APPLICATION:

Magna 777 "Thunder Stik" is extremely versatile and can be used to weld virtually all gauges, grades and types of cast iron. It will weld using even small, low amperage portable AC welding machines without overheating or sticking, or on DC machines, straight polarity.

PREPARATION

For dirty or oily surfaces, Magna 777 "ThunderStik" can be applied directly without preparation, due to the product's novel "controlled blast" pulse action which automatically burns off these surface contaminants.

However, where the oil, thick grease, paint or other encrustations have seeped deep into the cast iron grain, it may be necessary to eradicate the contaminants by using a strong, highly oxidizing oxy-acetylene torch prior to welding.

PRE-HEATING

For small pieces which are easily handled, no pre-heating is required. For larger parts, pre-heating up to 300°C is suggested. This temperature should be maintained while using Magna 777 "ThunderStik" to improve machinability. No peening is required but slag should be removed between passes.

Where the part to be welded is restrained (i.e. cannot expand or contract freely), peening between passes is recommended while the weld is still hot. Use low amperage and maintain short arc while using stringer beads or narrow weave beads.

Restrike arc on previously deposited Magna 777 "ThunderStik" weld metal. Slow cooling is recommended.

WELDING

The amperage should be set as follows:

| METRIC | IMPERIAL | GAUGE | SETTING |
|---------------|-----------------|--------------|----------------|
| 2.4 mm | 3/32" | 12g | 35-80 amps |
| 3.2 mm | 1/8" | 10g | 65-120 amps |
| 4.0 mm | 5/32" | 8g | 75-140 amps |

SAFETY DATA SHEET



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SDS-ID: GB-EN/8.1

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

1.1. Product identifier

Product name: Magna 777
UFI: WQ42-K0YX-U00W-1TAV

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

| | | | |
|--|--|--|---------------------------|
| <u>Supplier:</u> | GB importer: | <u>Distributed by:</u> | Trust Engineering Company |
| <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 | 9 Abdel Hamid El Deeb Street Alexandria, 21613 Egypt T: +(20)3 5822779 T: +(20)10 1223554 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 | |
| <u>Further information can be obtained from:</u> | 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 classified:
Skin Sens. 1;H317
Carc. 2;H351
STOT RE 1;H372

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2.2. Label elements

Welding electrodes are considered as articles and are therefore exempt from current labelling requirements.
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.



Danger

Contains:

Nickel

| | |
|-------------|--|
| H317 | May cause an allergic skin reaction. |
| H351 | Suspected of causing cancer. |
| H372a | Causes damage to organs through prolonged or repeated exposure if inhaled. |
| P201 | Obtain special instructions before use. |
| P260 | Do not breathe fume. |
| P280 | Wear eye protection and gloves. |
| P302 + P352 | IF ON SKIN: Wash with plenty of soap and water. |
| P308 + P313 | IF exposed or concerned: Get medical advice/attention. |
| P405 | Store locked up. |
| P501 | Dispose of contents/container in accordance with local regulations. |

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

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The product contains: metal and fillers.

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: |
|---------|-----------|-----------|-----------------------|------------------|---|--------|
| 30-60 | 7439-89-6 | 231-096-4 | 01-2119462838-24-XXXX | Iron | - | # |
| 15-40 | 7440-02-0 | 231-111-4 | 01-2119438727-29-XXXX | Nickel | Carc. 2;H351 STOT RE 1;H372 Skin Sens. 1;H317 | S; 7 |
| 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 | - | # |
| 3-7 | 7789-75-5 | 232-188-7 | 17-2119399297-20 | Calcium fluoride | - | # |
| 1-5 | 7782-42-5 | 231-955-3 | 01-2119486977-12-XXXX | Graphite | - | # |
| 0.5-1.5 | 1302-78-9 | 215-108-5 | - | Bentonite | - | |

Notes: #: The substance has been assigned an exposure limit.
S: May not require a label.
7: Alloys containing nickel are classified for skin sensitisation, when the release rate of 0,5 µg Ni/cm²/week (EN 1811) is exceeded.

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. In case of eczema or other skin disorders: Seek medical attention and bring these instructions.

Eye contact: Do not rub eye. Rinse with water. Contact physician if discomfort continues.

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

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

Symptoms/effects: 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: Avoid any exposure. When welding: 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: Collect in containers and seal securely.

6.4. Reference to other sections

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

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SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Safe handling advice: Avoid prolonged and repeated contact.
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 tightly closed original container in a dry, cool and well-ventilated 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> |
|-----------------|---|------------|-------------------------|--------------|---------------|--------------------|
| - | Iron oxide, fume | Fe | 5 mg/m3 | TWA | - | EH40 |
| | | - | 10 mg/m3 | STEL | 15min | |
| - | Nickel and water-insoluble nickel inorganic compounds (except nickel tetracarbonyl) | Ni | 0.5 mg/m3 | TWA | Sk; Carc; Sen | EH40 |
| - | Nickel water-soluble inorganic compounds (except nickel tetracarbonyl) | Ni | 0.1 mg/m3 | TWA | Sk; Carc; Sen | EH40 |
| 1317-65-3 | Limestone, total inhalable dust | - | 10 mg/m3 | TWA | - | EH40 |
| 1317-65-3 | Limestone, respirable dust | - | 4 mg/m3 | TWA | - | EH40 |
| 513-77-9 | Barium compounds, soluble | Ba | 0.5 mg/m3 | TWA | - | EH40 |
| 7782-42-5 | Graphite, inhalable dust | - | 10 mg/m3 | TWA | - | EH40 |
| 7782-42-5 | Graphite, respirable dust | - | 4 mg/m3 | TWA | - | EH40 |
| - | Fluoride (inorganic) | F | 2.5 mg/m3 | TWA | - | EH40 |

Notes:

EH40: EH40/2005.

Sk: Can be absorbed through skin.

Carc: Capable of causing cancer and/or heritable genetic damage.

Sen: Capable of causing occupational asthma.

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.
Provide easy access to water supply and eye wash facilities.

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

Physical state: Wire with a flux coating.

Colour: Black.

Odour: Odourless.

Odour threshold: Not available.

pH: Not relevant.

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 Excessive heat.

10.5. Incompatible materials

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

10.6. Hazardous decomposition products

Hazardous decomposition products: None under normal conditions.

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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: May cause an allergic skin reaction.

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

Carcinogenicity: Suspected of causing cancer.

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: Causes damage to organs through prolonged or repeated exposure if inhaled.

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. Toxic: danger of serious damage to health by prolonged exposure through inhalation.

Skin contact: May cause allergic skin disorders in sensitive individuals.

Eye contact: Particles/fumes in the eyes may cause discomfort/irritation.

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

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

11.2. Information on other hazards

Endocrine disrupting properties: The product does not contain any substance identified as having endocrine disrupting properties.

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SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity: There are no data on the ecotoxicity of this product.

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

12.6. Endocrine disrupting properties

Endocrine disrupting properties: The product does not contain any substance identified as having endocrine disrupting properties.

12.7. 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

Contaminated packaging: Dispose of contaminated packings as residue.

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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/AND/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

Special provisions: As a general rule, persons under 18 years of age are not allowed to work with this product. Users must be carefully instructed in the proper work procedure, the dangerous properties of the product and the necessary safety instructions.

National regulation: UK Statutory Instruments, 2021 No. 904, CONSUMER PROTECTION ENVIRONMENTAL PROTECTION HEALTH AND SAFETY. The REACH etc. (Amendment) Regulations 2021.
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 Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019 (SI 2019 No. 720), as amended.
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 Management of Health and Safety at Work Regulations 1999 (SI 1999 No. 3242), 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

For restrictions on use see section 15.

The following sections contain revisions or new statements: 1.

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

Abbreviations and acronyms used in the safety data sheet:

CSA= Chemical Safety Assessment.
PBT = Persistent, Bioaccumulative and Toxic.
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. |
| H317 | May cause an allergic skin reaction. |
| H351 | Suspected of causing cancer. |
| H372a | Causes damage to organs through prolonged or repeated exposure if inhaled. |

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.
