

# MAGNA 505

---

## DESCRIPTION:

---

Magna 505 is an electrode for welding aluminum. It may also be used as a flux-coated oxyacetylene aluminum welding rod and may, additionally be applied with carbon arc or carbon torch.

## UNPARALLELED VERSATILITY:

---

Magna 505 can actually weld all cast grades of aluminum and all wrought grades including the difficult 5xxx, 2xxx, and 6xxx series. Most engineers have found that with ordinary electrodes, it is impossible to weld the aluminum -copper alloys, aluminum – magnesium alloys, aluminum – silicon alloys. Magna 505 is the one electrode that is capable of welding every type of such difficult to weld alloys. This makes it possible to stock only one aluminum alloy Magna 505, for arc and gas welding of both cast and wrought aluminum and aluminum alloys.

## INNOVATIVE ELECTRODE:

---

No other electrode can be expected to perform like Magna 505. The core wire has been treated with a special barrier film. This prevents the core wire from oxidation and interaction with the flux. The pH of the coating is very carefully controlled in manufacture. This enables a super degree of activity without creating any galvanic action with special core wire in a noticeable way. The coating is high in special metals and chemicals. Magna believes that no other electrode available today matches the special qualities of Magna 505.

It is easy to test the superiority of Magna 505. Weld together two of the more difficult to weld types of aluminum such as the copper bearing, or the magnesium-silicon bearing types. Weld with any other electrode and then break the weld in a vise with hammer impact blows and a great amount of porosity, which can cause weld failure, will be evident in the weld. A weld made on the same difficult-to-weld aluminum with Magna 505, when broken similarly in a vise with a hammer, will reveal no trace of porosity and provide a sound weld.

## HIGH HOLDING POWER:

---

Magna 505 provides up to three times the strength of ordinary aluminum electrodes. In addition to extraordinary high strength, it provides a perfect color match with base metal.

## **EXCELLENT WELDIBILITY:**

---

Rapid solidification makes it possible for the first time to easily weld aluminum with the arc in vertical and overhead positions. Magna 505 provides excellent dense, porosity-free weld deposits. It has a high rate of deposition, over two times as fast as mild steel electrodes, by volume. The electrode is also relatively fume-free.

## **EASY SLAG REMOVAL:**

---

Slag is of a low viscosity and floats out of the weld and will not become entrapped.

## **HOW TO USE:**

---

### **When Applied using Electric Arc:**

---

A DC welding machine adjusted to reverse polarity should be used. Clean weld area. Bevel thickness 1/8" (3.2 mm) or heavier to a 75 bevel. On heavier sections a preheat of 400°F (204°C) will produce faster, flatter deposits at reduced amperage. Maintain a short arc with electrode almost perpendicular. Back-whip craters. Chip and remove slag between passes.

### **When Applied Using Oxyacetylene Torch:**

---

Adjust torch to a slightly excessive acetylene flame and lightly warm base metal. Melt a small portion of flux off electrode where weld is to begin. Play heat over flux until it wets the surface, then melt one drop of alloy and apply heat until it distributes over and bonds to the surface. Continue applying Magna 505 in this way. To assist flow of alloy, Magna 55 flux is recommended.

On completion flux can be wire brushed from weld. For more thorough removal, use a brush and warm water or a solution of equal parts water and technical nitric acid followed by a fresh water rinse.

## **TYPICAL APPLICATIONS:**

---

Structural members	Caravan & Truck Bodies	Aluminum housing and frames
Aluminum pumps	Foundry Patterns	Metal Plates
Core Boxes	Casting Repairs	Irrigation Piping.

## **RECOMMENDED AMPERAGES:**

---

<b>Metric</b>	<b>Inches</b>	<b>Gauge</b>	<b>Setting</b>
2.4 mm.	3/32	12	50-100 amps
3.2 mm.	1/8	10	65-120 amps

Copyright, All rights reserved.

ITW PP & F Korea Limited reserves the right to modify or change this product for purposes of improving its performance characteristics.

PIM 505.3	Version 2.0	Revision 1.0	Rev. Date: 1 January, 2016	Reference: CKL
-----------	-------------	--------------	----------------------------	----------------

# SAFETY DATA SHEET



Product name: Magna 505  
Supersedes date: 2023-06-28  
Product No.:

Page: 1/12  
Last revised date: 2023-11-07  
SDS-ID: GB-EN/2.1

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

### 1.1. Product identifier

Product name: Magna 505  
UFI: 9CD1-X07Y-J009-3C6A  
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

# SAFETY DATA SHEET

Product name:	Magna 505	Page:	2/12
Supersedes date:	2023-06-28	Last revised date:	2023-11-07
Product No.:		SDS-ID:	GB-EN/2.1

---

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

CLP: The product is classified: Skin Irrit. 2;H315 - STOT RE 1;H372 - Aquatic Chronic 3;H412

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

### 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.



Danger

Contains: Trilithium hexafluoroaluminate

H315 Causes skin irritation.

H372 Causes damage to organs through prolonged or repeated exposure if inhaled.

H412 Harmful to aquatic life with long lasting effects.

P101 If medical advice is needed, have product container or label at hand.

P260 Do not breathe fume.

P280 Wear protective clothing and gloves.

P501 Dispose of contents/container in accordance with local regulations.

UFI:9CD1-X07Y-J009-3C6A

### 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

---

# SAFETY DATA SHEET

Product name: Magna 505 Page: 3/12  
Supersedes date: 2023-06-28 Last revised date: 2023-11-07  
Product No.: SDS-ID: GB-EN/2.1

---

## 3.2. Mixtures

The product contains: metal and fillers.

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

CLP:

<u>%:</u>	<u>CAS-No.:</u>	<u>EC No.:</u>	<u>REACH Reg. No:</u>	<u>Chemical name:</u>	<u>Hazard classification:</u>	<u>Notes:</u>
45-55	7429-90-5	231-072-3	-	Aluminium	Water-react. 2;H261 Flam. Sol. 1;H228	T
10-20	13821-20-0	237-509-4	-	Trilithium hexafluoroaluminate	Acute Tox. 4;H332 STOT RE 1;H372 Aquatic Chronic 2;H411	
10-20	7647-14-5	231-598-3	-	Sodium chloride	-	
10-20	7447-40-7	231-211-8	-	Potassium chloride	-	
1-11	13775-52-5	237-409-0	-	Tripotassium hexafluoroaluminate	Skin Irrit. 2;H315 Eye Irrit. 2A;H319 STOT SE 3;H335	
1-11	7784-18-1	232-051-1	-	Aluminium fluoride	-	
0-10	7440-21-3	231-130-8	-	Silicon	-	#

Notes: T: If the substance is marketed in a form not having one or more of the physical hazards indicated by the harmonised classification and tests shows that the substance does not exhibit the specific physical hazard(s), it shall be classified in accordance with the result(s) of the test(s).  
#: The substance has been assigned an exposure limit.

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

---

# SAFETY DATA SHEET

Product name:	Magna 505	Page:	4/12
Supersedes date:	2023-06-28	Last revised date:	2023-11-07
Product No.:		SDS-ID:	GB-EN/2.1

---

## 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: 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.

---

# SAFETY DATA SHEET

Product name:	Magna 505	Page:	5/12
Supersedes date:	2023-06-28	Last revised date:	2023-11-07
Product No.:		SDS-ID:	GB-EN/2.1

---

## 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.

## 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 closed original container in a dry place.

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

Specific use(s): Welding material

---



# SAFETY DATA SHEET

Product name: Magna 505  
Supersedes date: 2023-06-28  
Product No.:

Page: 6/12  
Last revised date: 2023-11-07  
SDS-ID: GB-EN/2.1

## 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>
7429-90-5	Aluminium metal, respirable dust	-	4 mg/m3	TWA	-	EH40
7429-90-5	Aluminium metal, inhalable dust	-	10 mg/m3	TWA	-	EH40
7440-21-3	Silicon, respirable dust	-	4 mg/m3	TWA	-	EH40
7440-21-3	Silicon, inhalable dust	-	10 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 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.

# SAFETY DATA SHEET

Product name:	Magna 505	Page:	7/12
Supersedes date:	2023-06-28	Last revised date:	2023-11-07
Product No.:		SDS-ID:	GB-EN/2.1

---

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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

Physical state: Wire with a flux coating.

Colour: White.

Odour: Not available.

Odour threshold: Not available.

pH: Not available.

Melting point / freezing point: 660 °C

Boiling point: Not available.

Flash point: Not available.

Evaporation rate: Not available.

Flammability (solid, gas): Not available.

Explosive limits Not available.

Vapour pressure: Not available.

Vapour density: Not available.

Relative density: 6-9 g/cm<sup>3</sup>

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.

Explosive properties: Non-explosive

Oxidising properties: Not available.

### 9.2. Other information

Other data: Not relevant.

---

# SAFETY DATA SHEET

Product name:	Magna 505	Page:	8/12
Supersedes date:	2023-06-28	Last revised date:	2023-11-07
Product No.:		SDS-ID:	GB-EN/2.1

---

## 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.  
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.

---

# SAFETY DATA SHEET

Product name:	Magna 505	Page:	9/12
Supersedes date:	2023-06-28	Last revised date:	2023-11-07
Product No.:		SDS-ID:	GB-EN/2.1

---

## 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: Causes skin irritation.

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

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

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

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

Toxicological data: LC50 (inhalation, rat): 4 h  
Aluminium fluoride: >0.53 mg/L  
Trilithium hexafluoroaluminate: 0.5-1 mg/L  
Tripotassium hexafluoroaluminate: 4.47 mg/L  
Aluminium: >0.888 mg/L

### 11.2. Information on other hazards

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

---

# SAFETY DATA SHEET

Product name:	Magna 505	Page:	10/12
Supersedes date:	2023-06-28	Last revised date:	2023-11-07
Product No.:		SDS-ID:	GB-EN/2.1

---

## SECTION 12: ECOLOGICAL INFORMATION

### **12.1. Toxicity**

Ecotoxicity: Harmful to aquatic life with long lasting effects.  
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: The product is insoluble in water.

### **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.

---

# SAFETY DATA SHEET

Product name:	Magna 505	Page:	11/12
Supersedes date:	2023-06-28	Last revised date:	2023-11-07
Product No.:		SDS-ID:	GB-EN/2.1

---

## 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.

## 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.  
Retained CLP Regulation (EU) No. 1272/2008 as amended for Great Britain, known as GB CLP, with amendments.  
The REACH etc. (Amendment) Regulations 2021, known as UK REACH, as amended; including (EU) 2020/878.  
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.

---

# SAFETY DATA SHEET

Product name:	Magna 505	Page:	12/12
Supersedes date:	2023-06-28	Last revised date:	2023-11-07
Product No.:		SDS-ID:	GB-EN/2.1

---

## SECTION 16: OTHER INFORMATION

For restrictions on use see section 15.

The following sections contain revisions or new statements: 1, 2, 15.

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)

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.  
LC50 = Lethal Concentration 50%.  
PBT = Persistent, Bioaccumulative and Toxic.  
vPvB = very Persistent and very Bioaccumulative.

Additional information: Classification according to GB CLP: Calculation method.

### Wording of H-statements:

H228	Flammable solid.
H261	In contact with water releases flammable gases.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H372	Causes damage to organs through prolonged or repeated exposure.
H372a	Causes damage to organs through prolonged or repeated exposure if inhaled.
H411	Toxic to aquatic life with long lasting effects.
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](http://www.dhigroup.com)

---