MAGNA 88C

DESCRIPTION:

Magna 88C is a special solder type alloy that has been designed for applications requiring higher strength than that obtained from ordinary soft solders.

Magna 88C has a much higher remelt temperature than ordinary soft solders, and thus can be used for electric motor armatures where melting of solders at high temperatures is a problem. Magna 88C prevents "throw out" of solder alloy.

Magna 88C has superior wetting qualities when compared with ordinary solders. Magna 88C has a flux core which is far more active than rosin cored solders. Thus flux has the ability to penetrate deep into the pores of the metal and cleaning the metal enables Magna 88C to penetrate deep into the grain boundaries.

Magna 88C has a special affinity for stainless steel and has wide uses in the food industry where foodstuffs are likely to come into contact with soldered joints, because of its lead free formulation. Magna 88C has a variety of uses in the refrigeration industry and has a far better resistance to tarnishing than the more common soft solders in the food industry. Magna 88C is perfectly safe for use where foodstuffs are likely to come into direct contact with the soldered join, because of its lead free formulation.

Magna 88C has a variety of uses in the refrigeration industry and has a far better resistance to tarnishing than the more common soft solders. Rupture pressure rating at 38°C (100°F) is 725 psig.

Magna 88C may be applied by means of a flame or by using a soldering iron, making it an extremely versatile alloy.

Magna 88 flux may be used in conjunction with Magna 88C improve flow in long laps or difficult to bond metals.

Stainless steel is readily soldered with Magna 88C. Due to the very low thermal conductivity of stainless steel, it is advisable to use a large, hot soldering bit. It

is necessary to apply Magna 88 Flux liberally to the joint area. Any good solder joint design can be used; as in all solder joint design, make certain that the solder does not have to contribute to the structural strength of the assembly. Magna 88C readily wets to the stainless steel. The alloy should be applied to the junction between the flat face of the soldering iron and the stainless steel, rather than applying the alloy to the soldering iron. This is because the flux in the core of the solder will gas off when applied to the hot iron, rather than flowing down the side of the iron to the base metal as the alloy does.

Soldering stainless with a torch is more difficult and should not be done unless it is not practical to use an iron. With a torch it is difficult not to overheat. Overheating causes distortion and also causes the stainless steel to oxidize readily. Once a thick film of surface oxidization occurs, it is impossible to solder until the oxidized surface is abraded and mechanically removed. When using a torch, use the smallest possible flame and adjust to a highly carburizing flame and keep the torch in constant motion to avoid overheating. Since Magna 88C only requires 221°C for bonding, only the smallest amount of heat is required and this is why indirect heating, or heating with an iron is preferred.

When soldering very dirty stainless steel in maintenance, the food and chemical residues may be so heavy as to interfere with soldering unless they are removed. They should be removed with mechanical methods such as filing or scraping, or if only of light nature, with water and a soft brush. If extremely dirty, or if dirt exists embedded in seams, wash with a strong chemical solvent such as muriatic acid. Do not use any wire brush for cleaning as this usually rubs more dirt into the surface than it removes.

After soldering the only treatment necessary is removal of the flux which can be done with warm water. The flux can be removed perfectly by rinsing first in hot water containing 2% of concentrated hydrochloric acid per gallon of water, then a hot rinse followed by clear water rinse.

APPLICATION

Clean and degrease area to be joined. Brush Magna 88 flux over prepared area then apply a gentle heat, using a soldering iron or an oxyacetylene torch with a small tip, adjusted to a soft carburizing flame. Using an iron as the heat source is preferable, particularly on intricate work.

Transfer welding alloy using a soldering technique and allow preheating to conduct Magna 88C through the joint. If flow becomes sluggish, lightly play the flame or the iron over the area ensuring you do not burn the molten alloy.

Wash remains of any surplus flux away, using hot water.

When applied on Stainless Steel

Prevent formation of oxides which will weaken the strength of the weld, avoid over- heating the Stainless Steel. If applying Magna 88C with an oxyacetylene torch, select a very small tip and an excess acetylene flame. Be sure not to overheat since over- heated stainless steel becomes oxidized and is difficult to bond. Magna 88C only requires 221°C (429°F) so oxidation should be avoided.

SAFETY DATA SHEET

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

1.1. Product identifier

Product name: Magna 88

Container size: D: 0,062"/1,6 mm

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

Application: Soldering material

1.3. Details of the supplier of the safety data sheet

Supplier: EU importer:

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Manufacturer: ITW PP & F Korea Limited.
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Further information can be obtained from: magna@magnagroup.com

1.4. Emergency telephone number

Emergency telephone: NHS: 111

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP: Resp. Sens. 1;H334
Skin Sens. 1;H317

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:	Ethylenediammonium dichloride
H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
P261	Avoid breathing gas, fume, vapours or spray.
P280	Wear protective clothing, gloves, eye and face protection.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
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: 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

CLP:

%:	CAS-No.:	EC No.:	REACH Reg. No:	Chemical name:	Hazard classification:	Notes:
90-100	7440-31-5	231-141-8	-	Tin	-	#
1-5	7440-22-4	231-131-3	-	Silver	-	#
0-4	123-99-9	204-669-1	-	Azelaic acid	Skin Irrit. 2;H315 Eye Irrit. 2;H319	
0-2	333-18-6	206-369-6	-	Ethylenediammonium dichloride	Acute Tox. 4;H302 Skin Irrit. 2;H315 Eye Irrit. 2;H319 Skin Sens. 1;H317 Resp. Sens. 1;H334 STOT SE 3;H335	
0-2	557-66-4	209-182-8	-	Ethylammonium chloride	Skin Irrit. 2;H315 Eye Irrit. 2;H319 STOT SE 3;H335	

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

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation: Inhalation of soldering 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.

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 soldering: Do not breathe fumes. Observe good chemical hygiene practices.

Technical measures: No special precautions.

Technical precautions: When soldering: 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): Soldering material

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits:

CAS-No.:	Chemical name:	As:	Exposure limits:	Type:	Notes:	References:
7440-22-4	Silver, metallic	-	0.1 mg/m3	TWA	-	EH40
-	Tin compounds, inorganic (except SnH4)	Sn	2 mg/m3	TWA	-	EH40
		-	4 mg/m3	STEL	15min	

Notes: EH40: EH40/2005.

DNEL/PNEC: No information available.

8.2. Exposure controls

Engineering measures: When soldering: 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 soldering: Use special soldering 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: Metal or metallic.

Odour: Odourless.

Melting point / freezing point: 221°C

Relative density: 7,465

Solubility: Insoluble in water

9.2. Other information

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 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:	May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
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:	Contains: Flux (acid). May cause irritation.
Eye contact:	Contains: Flux (acid). May irritate and cause redness and pain.
Ingestion:	Not likely, due to the form of the product.
Specific effects:	Prolonged or repeated exposure to soldering 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 mainly consists of inorganic compounds which are not biodegradable. There are no available data on the degradability of the remaining substances of the product.

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. 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 regulated as dangerous goods under IMDG Code, IATA-DGR and ADR/RID.

14.1. UN number

UN-No: Not regulated.

14.2. UN proper shipping name

Proper Shipping Name: Not regulated.

14.3. Transport hazard class(es)

Class: Not regulated.

14.4. Packing group

PG: Not regulated.

14.5. Environmental hazards

Marine pollutant: Not regulated.

Environmentally Hazardous substance: Not regulated.

14.6. Special precautions for user

Special precautions: Not regulated.

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

Transport in bulk: Not regulated.

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: 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 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.

SECTION 16: OTHER INFORMATION

The user must be instructed in the proper work procedure and be familiar with the contents of these instructions. For restrictions on use see section 15.

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

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Abbreviations and acronyms used in the safety data sheet:	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.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.

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.