



UKCG MAGNESIUM TECHNOLOGIES LIMITED

PURE MG, PURE QUALITY, PURE SERVICE



## CONTENTS

INTRODUCTION	01
QUALITY	01
PRODUCTS & MARKETS	01
PYROTECHNIC / DEFENSE	02
STEEL / FOUNDRY	04
CHEMICAL	06

## INTRODUCTION

**UKCG Magnesium Technologies is built on years of pre-foundation research and development focused on production techniques, raw material inputs and production partners, creating the development of advanced Magnesium Powder technologies under the UKCG brand.**

## QUALITY

UKCG employees, with vast knowledge and experience in the Magnesium development and production fields, assure advanced quality products backed by a responsive, knowledgeable and professional team, ensuring our customers receive seamless and dedicated service.

- Proven quality Magnesium
- Exact product blending utilising advanced production equipment and techniques
- Product and application 'know how'
- Consulting and product development services
- Full international after sales service
- Full international technical service

## PRODUCTS & MARKETS

UKCG is proud to be able to offer advanced Magnesium products for varied industrial applications including:

- Pyrotechnic
- Chemical
- Steel, Foundry & Refractory
- Welding

For pyrotechnic and chemical industry applications, UKCG product line offers magnesium powder, turnings, chips and flakes.

The products UKCG specialise in are based on two main manufacture processes:

- Atomised Powders: UKCG atomised powders are produced by melting 99.8% Magnesium and then spraying the molten magnesium under an inert atmosphere creating a spherical powder which is then screened and blended to exacting ratios to produce our range of products.
- Cut Powders: UKCG cut powders are produced utilising some of the most advanced cutting and sizing equipment available ensuring product suitability for varying defense and industrial applications.

## PYROTECHNIC / DEFENSE

**UKCG offer special manufactured Magnesium products to meet the highest standards to achieve consistent quality that meets the demands of Pyrotechnic and Defense Industries in select global markets.**

Products conform to Military Specifications MIL-M382C, MIL-P 14067B (MU) and DEF STAN 13/130 issue 1.

MILITARY APPLICATION	NAME
AIRBOURNE	IRCM Flares
NAVAL	IRCM Flares / Illuminations
BATTLEFIELD	Flares / Illuminations

### UKMG-AP75-210 $\mu\text{m}$

APPLICATION	Chemical, pyrotechnic, welding and refractory industry
COMPOSITION	Made from MgAl alloy 50/50 Mg ( 50 % +/- 1 % ) Al ( 50 % +/- 1 % )
GRANULATION	Mg/Al powder 75-210 $\mu\text{m}$ Typical screen analyses To JEL 200 Screen inlet: DIN 4188 > 210 $\mu\text{m}$ 5 % max < 75 $\mu\text{m}$ 5 % max
APPARENT DENSITY	Approx. 750-900 kg/m <sup>3</sup>
SPECIAL PROPERTIES	If requested passivated with silicon oil
PACKAGING	UN Certified steel drums



UKMG-P75-180  $\mu\text{m}$

APPLICATION	Chemical, pyrotechnic, welding and metallurgical industry						
COMPOSITION	Made From Mg Min 99,90 %						
GRANULATION	Mg powder 75-180 $\mu\text{m}$ Typical screen analyses to JEL 200 Screen inlet: DIN 4188 <table border="0"> <tr> <td>&lt; 200 <math>\mu\text{m}</math></td> <td>100 %</td> </tr> <tr> <td>&lt; 160 <math>\mu\text{m}</math></td> <td>95 % min</td> </tr> <tr> <td>&lt; 63 <math>\mu\text{m}</math></td> <td>10 %</td> </tr> </table>	< 200 $\mu\text{m}$	100 %	< 160 $\mu\text{m}$	95 % min	< 63 $\mu\text{m}$	10 %
< 200 $\mu\text{m}$	100 %						
< 160 $\mu\text{m}$	95 % min						
< 63 $\mu\text{m}$	10 %						
APPARENT DENSITY	Approx. 600-700 Kg/m <sup>3</sup>						
SPECIAL PROPERTIES	Due to a special production procedure a low oxide content is achieved						
PACKAGING	UN Certified steel drums						

UKMG-P100  $\mu\text{m}$

APPLICATION	Chemical, pyrotechnic, welding and metallurgical industry						
COMPOSITION	Made From Mg Min 99,90 %						
GRANULATION	Mg Powder 100 $\mu\text{m}$ Typical screen analyses to JEL 200 Screen inlet: DIN 4188 <table border="0"> <tr> <td>&gt; 100 <math>\mu\text{m}</math></td> <td>5 % max</td> </tr> <tr> <td>53-100 <math>\mu\text{m}</math></td> <td>50-80 %</td> </tr> <tr> <td>&lt; 53 <math>\mu\text{m}</math></td> <td>15-45 %</td> </tr> </table>	> 100 $\mu\text{m}$	5 % max	53-100 $\mu\text{m}$	50-80 %	< 53 $\mu\text{m}$	15-45 %
> 100 $\mu\text{m}$	5 % max						
53-100 $\mu\text{m}$	50-80 %						
< 53 $\mu\text{m}$	15-45 %						
APPARENT DENSITY	Approx. 550-700 Kg/m <sup>3</sup>						
SPECIAL PROPERTIES	Due to a special production procedure a low oxide content is achieved						
PACKAGING	UN Certified steel drums						

## STEEL / FOUNDRY

**UKCG Magnesium Granules are utilised within the Iron and Steel industry for the desulphurization process. UKCG offer a product line which encompasses pure magnesium granules, magnesium alloys and blends all used in hot metal desulphurisation applications. The process of desulphurisation ensures optimum corrosion resistance of steel product.**

Magnesium is used in foundry application for the modification of lamellar graphite inclusions to nodular graphite shape. This ensures better physical properties of the cast iron.

### UKMG – MG200/800

APPLICATION	Chemical industry, steel industry								
COMPOSITION	Made from Mg Min 99,90 %								
GRANULATION	Mg powder 200/1000 Typical screen analyses to JEL 200 Screen inlet: DIN 418 <table border="0"> <tr> <td>&gt; 0,8 mm</td> <td>5 % max</td> </tr> <tr> <td>0.5-0.8 mm</td> <td>50-80 %</td> </tr> <tr> <td>0.2-0.5 mm</td> <td>10-40 %</td> </tr> <tr> <td>&lt; 0.2 mm</td> <td>traces</td> </tr> </table>	> 0,8 mm	5 % max	0.5-0.8 mm	50-80 %	0.2-0.5 mm	10-40 %	< 0.2 mm	traces
> 0,8 mm	5 % max								
0.5-0.8 mm	50-80 %								
0.2-0.5 mm	10-40 %								
< 0.2 mm	traces								
APPARENT DENSITY	Approx. 900 kg/m <sup>3</sup>								
SPECIAL PROPERTIES	Due to a special production procedure a low oxide content is achieved								
PACKAGING	UN Certified big bags								

### UKMG-RA90/10 – MG200/800

APPLICATION	Steel industry, hot metal desulphurization								
COMPOSITION	Made from Mg, min. 99,90 % mixed with 10 % high fluidized lime and Aluminum, stabilized and flow treated								
GRANULATION	Mg powder 200/800 Typical screen analyses to JEL 200 Screen inlet: DIN 4188 <table border="0"> <tr> <td>&gt; 0,8 mm</td> <td>max 5 %</td> </tr> <tr> <td>0.5-0.8 mm</td> <td>50-80 %</td> </tr> <tr> <td>0.2-0.5 mm</td> <td>10-40 %</td> </tr> <tr> <td>&lt; 0.2 mm</td> <td>traces</td> </tr> </table>	> 0,8 mm	max 5 %	0.5-0.8 mm	50-80 %	0.2-0.5 mm	10-40 %	< 0.2 mm	traces
> 0,8 mm	max 5 %								
0.5-0.8 mm	50-80 %								
0.2-0.5 mm	10-40 %								
< 0.2 mm	traces								
APPARENT DENSITY	Approx. 850 - 900 kg/m <sup>3</sup>								
SPECIAL PROPERTIES	Due to a special production procedure a low oxide content is achieved Product is flow treated.								
PACKAGING	UN Certified big bags								

UKMG-RA90/10 – MGR200/800

APPLICATION	Steel industry, hot metal desulphurization								
COMPOSITION	Made from Mg secondary ingots, min 90 % Mg, 9 % Al, 1 % various elements, stabilized and flow treated								
GRANULATION	Mg alloy powder 200/800 Typical screen analyses to JEL 200 Screen inlet: DIN 4188 <table border="0"> <tr> <td>&gt; 0,8 mm</td> <td>5 % max</td> </tr> <tr> <td>0.5-0.8 mm</td> <td>45-85 %</td> </tr> <tr> <td>0.2-0.5 mm</td> <td>10-50 %</td> </tr> <tr> <td>&lt; 0.2 mm</td> <td>traces</td> </tr> </table>	> 0,8 mm	5 % max	0.5-0.8 mm	45-85 %	0.2-0.5 mm	10-50 %	< 0.2 mm	traces
> 0,8 mm	5 % max								
0.5-0.8 mm	45-85 %								
0.2-0.5 mm	10-50 %								
< 0.2 mm	traces								
APPARENT DENSITY	Approx. 800 - 900 kg/m <sup>3</sup>								
SPECIAL PROPERTIES	Due to a special production procedure low oxide content is achieved. Product is flow treated.								
PACKAGING	UN Certified big bags								

UKMG-RA97/3 – MGR200-1000

APPLICATION	Chemical industry, steel industry								
COMPOSITION	Made from Mg min. 99,90 %								
GRANULATION	Mg powder 200/1000 Typical sieve analyse to JEL 200 Sieve inlet: DIN 4188 <table border="0"> <tr> <td>&gt; 0,8 mm</td> <td>5 % max</td> </tr> <tr> <td>0.5-0.8 mm</td> <td>50-80 %</td> </tr> <tr> <td>0.2-0.5 mm</td> <td>10-40 %</td> </tr> <tr> <td>&lt; 0.2 mm</td> <td>traces</td> </tr> </table>	> 0,8 mm	5 % max	0.5-0.8 mm	50-80 %	0.2-0.5 mm	10-40 %	< 0.2 mm	traces
> 0,8 mm	5 % max								
0.5-0.8 mm	50-80 %								
0.2-0.5 mm	10-40 %								
< 0.2 mm	traces								
APPARENT DENSITY	Approx. 900 kg/m <sup>3</sup>								
SPECIAL PROPERTIES	Due to a special production procedure a low oxide content is achieved. Product is flow treated.								
PACKAGING	UN Certified big bags								



## CHEMICAL

**UKCG turnings, chips and flakes are utilised for Grignard reactions. The larger surface area of turnings, chips and flakes assists in calming the volatility of the Grignard reaction. Grignard reagent is critical in the synthesis of complex organic molecules which is created by its ability to transfer the alchyl group practically intact whilst not causing isomeric changes.**

### UKMG-T2

APPLICATION	Metal Organic Compounds Grignard Reaction
SIZE	Thickness: 0.20 - 0.30 mm Width: ~ 0.6 mm Length: 2,0 – 4,0 mm
COMPOSITION	Cu 0.02 % max      Fe 0.05 % max Mn 0.01 % max      Ni 0.001 % max Sn 0.01 % max      Pb 0.01 % max Total Others 0.05 % max Mg 99.90 % min
SPECIAL PROPERTIES	The material is free of dust, has a regular shape and batches will be uniform. If required, this product can be delivered made from high purity magnesium (99,99 % and 99,999 %)
PACKAGING	UN Certified 216 L steel drums or big bags

### UKMG-T3

APPLICATION	Metal Organic Compounds Grignard Reaction
SIZE	Thickness: 0.35 - 0.45 mm Width: 1.00 - 1.50 mm Length: 2.00 - 4.00 mm
COMPOSITION	Cu 0.02 % max      Fe 0.05 % max Mn 0.01 % max      Ni 0.001 % max Sn 0.01 % max      Pb 0.01 % max Total Others 0.05 % max Mg 99.90 % min
SPECIAL PROPERTIES	The material is free of dust, has a regular shape and batches will be uniform. If required, this product can be delivered made from high purity magnesium (99,99 % and 99,999 %)
PACKAGING	UN Certified 216 L steel drums or big bags

## UKMG-T5

APPLICATION	Metal Organic Compounds Grignard Reaction
SIZE	Thickness: ~ 0.5 mm Width: ~ 1.5 mm Length: ~ 2-4 mm
COMPOSITION	Cu 0.02 % max      Fe 0.05 % max Mn 0.01 % max      Ni 0.001 % max Sn 0.01 % max      Pb 0.01 % max Total Others 0.05 % max Mg 99.90 % min
SPECIAL PROPERTIES	The material is free of dust, has a regular shape and batches will be uniform. If required, this product can be delivered made from high purity magnesium (99,99 % and 99,999 %)
PACKAGING	UN certified 220 L steel drums or big bags

## UKMG-T8

APPLICATION	Metal Organic Compounds Grignard Reaction
SIZE	Thickness: ~ 0.8 mm Width: ~ 2.5 mm Length: ~ 3-4 mm
COMPOSITION	Cu 0.02 % max      Fe 0.05 % max Mn 0.01 % max      Ni 0.001 % max Sn 0.01 % max      Pb 0.01 % max Total Others 0.05 % max Mg 99.90 % min
SPECIAL PROPERTIES	The material is free of dust, has a regular shape and batches will be uniform. If required, this product can be delivered made from high purity magnesium (99,99 % and 99,999 %)
PACKAGING	UN certified 220 L steel drums or big bags





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