



QUALITY
WITH
HONESTY

AN ISO 9001:2015 CERTIFIED COMPANY

KRN ALLOYS PVT. LTD.

www.krnalloys.co.in



Who? Are We ?

Welcome to **KRN Alloys Pvt Ltd**, a premier manufacturer of metal powders and an ISO 9001:2015 certified company. We combine quality and creativity to create products of the highest calibre for a range of industrial applications.

We are committed to offering premium metal powders that satisfy the various demands of our clients. With 2,00,000 square feet of developed space and 3,50,000 square feet of modern facilities, we are able to create a variety of metal powders, including those made of mild steel, copper, lead, zinc, tin, and other metals. Our skilled team of experts is committed to making sure that each product satisfies the highest requirements for performance and quality.

We at KRN Alloys are aware of how crucial constant quality is in the metal powders sector. Our products are free of impurities thanks to our strict quality control procedures, which also ensure that they work consistently and dependably.

Welding, brazing, powder metallurgy, core wire, stainless steel cutting, body warmers, and other uses are just a few of the numerous applications we proudly offer for our metal powders. Our powders play a vital role in the production of high-performance components in a variety of industries, including automotive, aerospace, electronics, chemical, melting, paints, diamond tools, textile, etc. and medical devices.

KRN Alloys is dedicated to minimising our environmental impact. Our facilities use sustainable practises to reduce waste, conserve energy, and promote recycling.

In addition to our commitment to quality and sustainability, KRN Alloys is committed to providing exceptional customer service. Our knowledgeable and friendly staff is available to answer any questions and assist with product selection and customization.

At KRN Alloys, we believe that the success of our company is inextricably linked to the success of our customers. We can assist you with standard products or customised solutions.

We invite you to become a member of the KRN Alloys family and experience the benefits of quality and innovation for yourself. Contact us today to learn more about our products and services.



PRODUCTION FACILITIES

WATER ATOMIZATION PLANT



Water atomization is a process used in metal production to produce metal powders with a uniform particle size. It involves using high-pressure water to break down a molten metal stream into fine droplets, which are then cooled and solidified into metal powders. This method is particularly useful for producing metal powders with consistent properties and uniform particle size, making it a popular choice in powder metallurgy production.

Water Atomization Plant Available For
IRON | STEEL | COPPER | SPECIAL ALLOYS

At KRN, we adopt our UMP manufacturing process (Online metal refining) which allows us to deliver the purest metals

AIR ATOMIZATION PLANT



Air atomization is a process of breaking down a liquid into small droplets using high-pressure air. It is widely used in various industries such as paint, food, and pharmaceuticals for the production of sprays and suspensions. The process helps to increase the surface area of the liquid, making it easier to mix with other substances and improve the overall consistency of the final product. The size of the droplets produced through air atomization is controlled by adjusting the air pressure and the flow rate of the liquid.

Air Atomization Plant Available For
ZINC | LEAD | TIN

ANNEALING FURNACE (6 NOS)



Reducing and annealing are two important heat treatment processes used to change the properties of Metal Powders and alloys.

Reducing is a process where the Metal Powder is heated to a temperature above its recrystallization temperature and then cooled slowly. This process helps to reduce the grain size of the Metal Powder, making it more uniform and homogeneous. It is commonly used to improve the mechanical properties of Metal Powders and alloys, such as increasing their strength and ductility.

Annealing is a process of heating a Metal Powder to a high temperature and then cooling it slowly to improve its ductility and reduce its hardness. This process helps to relieve internal stresses that have built up in the Metal Powder, making it easier to shape and machine. Annealing is often used to make Metal Powders and alloys more workable and to improve their overall quality.

Both reducing and annealing are critical steps in the production of high-quality Metal Powder products and are used to improve the performance and durability of various Metal Powder components.



GRINDING UNIT
(PULVERISERS -8 UNIT, GYRO SCREENS -12 UNIT)

2 TON BLENDER (1 UNIT) | 500 KG BLENDER (1 UNIT)

TESTING & LABORATORY



Our advanced metal laboratory is equipped with the latest technology and equipment for chemical, physical and thermal analysis of metals and alloys. The laboratory is staffed by highly trained and experienced technicians who are committed to providing accurate and reliable results to our clients.

The chemical analysis section of the laboratory is equipped with state-of-the-art spectroscopy and x-ray diffraction instruments that can accurately determine the elemental composition and crystal structure of metals and alloys. The results from these instruments provide valuable information about the quality and properties of the materials, allowing for better selection and control of the materials used in various applications.

The physical analysis section of the laboratory is equipped with modern testing equipment, such as tensile testers, hardness testers, and fatigue testers, that can accurately measure the mechanical properties of metals and alloys. This information is critical in determining the suitability of the materials for various applications, such as in high-stress environments, and in ensuring the performance and safety of metal components.

We are committed for providing a comprehensive range of chemical, physical, and thermal analysis services that help to ensure the quality and reliability of the materials used in various applications. Our commitment to providing accurate and reliable results, along with the expertise of our technicians, make our laboratory a trusted partner for those seeking to optimize the performance and safety of metal components.

CHEMICAL ANALYSIS

- Spectrometer, XRF Analyser
- Fully Equipped WET Lab
- Carbon Sulphur Apparatus
- Hydrogen Loss Furnace

PHYSICAL ANALYSIS

- Hall Flow Meter
- Lab Sieve Analysis
- Digital Approved Lab Weigh Scale
- Tube Furnace (For Hydrogen Loss)
- Muffle Furnace
- Dewinter Computerized Particle Microscopic Analyser
- Lab Blender
- 60 Ton Lab Hydraulic Press with MPIF Approved Dies
- Transverse Rupture Testing Dies
- Loading Beam Green Strength testing Device
- Lab Sintering/Annealing Furnace
- Density Balance

INDUSTRIES WE SERVE

Metal powders we manufacture serves a wide range of industries, including:

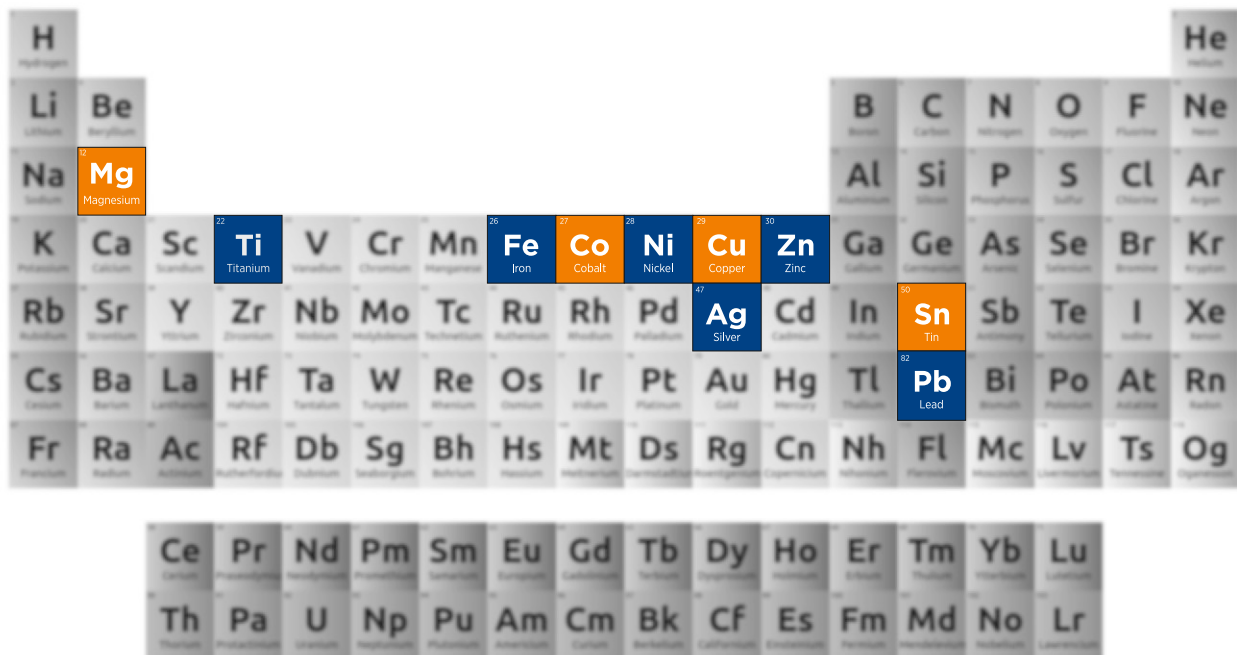


**AEROSPACE & DEFENCE | AUTOMOTIVE | BIOMEDICAL | CHEMICAL
ENERGY | ELECTRONICS | JEWELRY | MEDICAL DEVICES
NUCLEAR | POWDER METALLURGY | TOOL AND DIE
3D PRINTING & ADDITIVE MANUFACTURING
SURFACE COATINGS | TEXTILES | SPORTING GOODS**

Metal powders are used in various applications such as production of hard-metal tools, solid lubricants, and catalysts, as well as in the production of metal-based components for various industries.

PRODUCTS WE MANUFACTURE AND DEAL IN

There are many types of metal powders that can be produced, including:



The periodic table shows various elements. Elements highlighted in orange boxes include: Mg (Magnesium), Fe (Iron), Co (Cobalt), Ni (Nickel), Cu (Copper), Zn (Zinc), Ag (Silver), Sn (Tin), and Pb (Lead). Elements highlighted in blue boxes include: Ti (Titanium).

In addition to these pure metal powders, We also deal in alloys and composite metal powders. Metal powders used depends on the specific application and the properties desired in the final product. Such as tungsten and cobalt powders are commonly used in the production of cutting tools due to their high hardness and wear resistance.

OUR MOTIVE



Our vision in the Metal Powder Industry is to be a leading supplier of high-quality, sustainable, and innovative metal powder solutions that meet the evolving needs of a diverse range of industries and applications. We strive to continuously improve our processes and technology to deliver exceptional performance, reliability, and value to our customers, while minimizing our impact on the environment. By collaborating with our partners and customers, we aim to push the boundaries of what is possible and lead the way towards a more efficient and sustainable future

ATOMIZED METAL POWDER

COPPER POWDER (SINTERED GRADE)

Grade	Chemical Composition (%)			Particle Size - in Microns (%)			AD (Gms/CC)	Flow Rate (s/50 gm)	Green Density @600 Mpa Gm/CC	Green Strength N/mm2
	Copper (% Min)	H ₂ Loss/O ₂ (% Max)	Acid Insoluble (% Max)	+150	+105	+45				
KC22	99.5%	0.2%	0.2%	NIL	Balance	30 Max	2.0-2.4	45		
KC26	99.5%	0.2%	0.2%	NIL	Balance	30 Max	2.4-2.8	40		
KC28	99.5%	0.2%	0.2%	NIL	Balance	30 Max	2.9-3.0	40		



LEAD POWDER

Grade	Chemical Composition (%)			Particle Size - in Microns (%)			AD (Gms/CC)	Flow Rate (s/50 gm)	Green Density @600 Mpa Gm/CC	Green Strength N/mm2
	PB (% Min)	H ₂ Loss/O ₂ (% Max)	Acid Insoluble (% Max)	+150	+105	+45				
	99.5%	NIL	0.5%	NIL	Balance	45 Max	5.5-6.5	45	As Per MPIF Standard	As Per MPIF Standard



TIN POWDER

Grade	Chemical Composition (%)			Particle Size - in Microns (%)			AD (Gms/CC)	Flow Rate (s/50 gm)	Green Density @600 Mpa Gm/CC	Green Strength N/mm2
	SN (% Min)	H ₂ Loss/O ₂ (% Max)	Acid Insoluble (% Max)	+150	+105	+45				
	99.5%	NIL	0.2%	NIL	Balance	45 Max	3.9-6.5	45	As Per MPIF Standard	As Per MPIF Standard

ZINC POWDER

Grade	Chemical Composition (%)			Particle Size - in Microns (%)			AD (Gms/CC)	Flow Rate (s/50 gm)	Green Density @600 Mpa Gm/CC	Green Strength N/mm2
	ZN (% Min)	H2 Loss/O2 (% Max)	Acid Insoluble (% Max)	+150	+105	+45				
	99.5%	NIL	0.2%	NIL	Balance	45 Max	2.0-2.4	45	As Per MPIF Standard	As Per MPIF Standard



POWDER METALLURGY APPLICATIONS

Grade	Chemical Composition (%)							Particle Size - in Microns (%)					AD (Gms/CC)	Flow Rate (s/50 gm)	Green Density @600 Mpa Gm/CC	Green Strength N/mm2
	Fe T	C	Si	Mn	S	P	O-tot	+250	+180	+150	-150+45	-45				
KSP 100.29	Base	0.01	0.05	0.15	0.015	0.015	0.10	-	>2	5-10	65-75	15-20	2.98	27	7.1-7.2	26
KIP 100.29		0.03	0.05	0.20	0.015	0.015	0.10	-	>4	5-10	70-80	15-25	2.90	25	7.0	26
KIP 80.29		0.03	0.05	0.20	0.015	0.015	0.15	>5	8	10-15	65-75	15	2.94	24	6.8	22
KIP 100.27		0.02	0.05	0.15	0.015	0.015	0.10	-	>3	5-10	65-75	15-20	2.78	24	6.7	24
KIP 100.30		0.02	0.05	0.15	0.020	0.015	0.10	-	2	10-15	60-70	25	3.07	26	7.1	25



OXYGEN ABSORBER

Grade	Chemical Composition (%)						Particle Size - in Microns (%)		AD (Gms/CC)	Flow Rate (s/50 gm)
	Fe T	C	Si	Mn	S	O-tot	>5 %	95-100 %		
KRN KOA 20	Base	0.03	0.05	0.15	0.015	0.10	840	- 840	2.9 - 3.1	28 - 32
KRN KOA 40		0.03	0.05	0.15	0.015	0.10	+400	- 400		
KRN KOA 60		0.03	0.05	0.15	0.015	0.15	+250	- 250		
KRN KOA 80		0.03	0.05	0.15	0.015	0.10	+180	- 180		
KRN KOA 100		0.02	0.05	0.15	0.020	0.10	+150	- 150		



GAS & WATER JET CUTTING

Grade	Chemical Composition (%)						Particle Size - in Microns (%)			AD (Gms/CC)	Flow Rate (s/50 gm)
	Fe T	C	Si	Mn	S	O-tot	>5 %	80-85 %	10-15 %		
KCP 100.29	Base +99%	0.03	0.05	0.15	0.015	0.10	+180	- 150	- 45	2.9 - 3.1	28-32
KCP 40.29		0.03	0.05	0.15	0.015	0.10	+840	- 400	+180		
KCP 20.29		0.03	0.05	0.15	0.015	0.15	+1000	- 840	+400		



WELDING GRADE & CORE WIRE GRADE

Grade	Particle Size - in Microns (%)			Chemical Composition (%)						AD (Gms/CC)	Flow Rate (s/50 gm)
	>5%	80-85%	10-15%	Fe T	C	Si	Mn	S	O-tot		
KAW 40.29	400	- 400	+180	Base +99%	0.03	0.1	0.2	0.02	0.1	2.9 - 3.1	28-32
KAW 60.29	250	- 250	+150		0.03	0.1	0.2	0.02	0.1		
KAW 100	180	- 180	+75		0.03	0.1	0.2	0.02	0.15		
CORE 20.29	840	- 840	+600		0.03	0.1	0.2	0.02	0.1		
CORE 40.29	400	- 400	+250		0.03	0.1	0.2	0.02	0.1		



DIAMOND TOOLS

Grade	Particle Size - in Microns (%)		Chemical Composition (%)						AD (Gms/CC)	Flow Rate (s/50 gm)
	>5%	90-95%	Fe T	C	Si	Mn	S	O-tot		
KAD-100	+840	- 840	Base +99%	0.01	0.05	0.1	0.02	0.1	As Per MPIF Standard	As Per MPIF Standard
KAD-350	+400	- 400		0.01	0.05	0.1	0.02	0.1		



MELTING BRIQUETTE/CAKE/ POWDERS

Grade	Particle Size - in Microns (%)		Chemical Composition (%)						AD (Gms/CC)	Flow Rate (s/50 gm)
	>5%	90-95%	Fe T	C	Si	Mn	S	O-tot		
KRN KMP 60	+840	- 840	Base +99%	0.01	0.05	0.1	0.02	0.1	As Per MPIF Standard	As Per MPIF Standard
KRN KMC 42	+400	- 400		0.01	0.05	0.1	0.02	0.1		
KRN KMC 60+ (Cake)	+840	- 840		0.01	0.05	0.1	0.02	0.1		



IRON ALLOYING TABLETS (MASTAB)

It is used by Primary Aluminium producers to add Iron into molten aluminium. It consists of homogenous mixture of Iron Powder, Binder Fluxes and Aluminum Powder etc.

R-IRON ALLOYING TABLETS (MASTAB)




It is used by Primary Aluminium producers to add Iron into molten aluminum. It consists of homogenous mixture of Reduced Iron Powder (FeT 95%+), Binder Fluxes and Aluminium Powder etc.

ATOMIZED BLACK IRON POWDER

We Can Delivery High Quality Atomized Black Iron Powders with fulfilling the customers' requirements in various parameters such as Mesh Size, Chemical Compositions, Physical Parameters.





ADVANTAGE			
Complex Shapes	Easy to produce complex shapes	Limited ability to produce complex shapes	Limited ability to produce complex shapes
Consistency	High consistency in quality and properties	Variability in quality and properties	Variability in quality and properties
Material Usage	Low material waste	High material waste	High material waste
Cost	Generally lower cost compared to casting and forging	Generally higher cost compared to powder metallurgy	Generally higher cost compared to powder metallurgy
Porosity	Low porosity, resulting in high density and strength	High porosity, resulting in lower density and strength	Low porosity, but not as consistent as powder metallurgy
Size	Ability to produce small and large parts with consistent quality	Limited ability to produce small and large parts with consistent quality	Limited ability to produce small and large parts with consistent quality
Heat Treatment	Easy to heat treat for desired properties	Difficult to heat treat for desired properties	Difficult to heat treat for desired properties
Carbon Emission			

In conclusion, the sintering process offers significant advantages over traditional casting and forging processes. Sintering produces parts with higher dimensional accuracy, superior mechanical properties, and increased material efficiency. It also offers greater flexibility in terms of part design and production quantities. While there may be certain limitations to the sintering process, such as higher initial costs and longer production times, its benefits make it a highly attractive option for a wide range of applications. As such, the sintering process is likely to continue to gain popularity in the manufacturing industry as a way to produce high-quality parts with greater efficiency and precision.



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