

Since 2001

METALWORLD™

Devoted to Foundry & Non-Ferrous Metals Industry

Vol. 23 No. 11

November 2024

Registered-RNI No. MAHENG/2002/7908

www.metalworld.co.in

Dive into the latest trends and innovations in the Zinc and Lead industries



Dr Shantanu Chakrabarti,
Visiting Scientist, DMSRDE (DRDO),
Kanpur



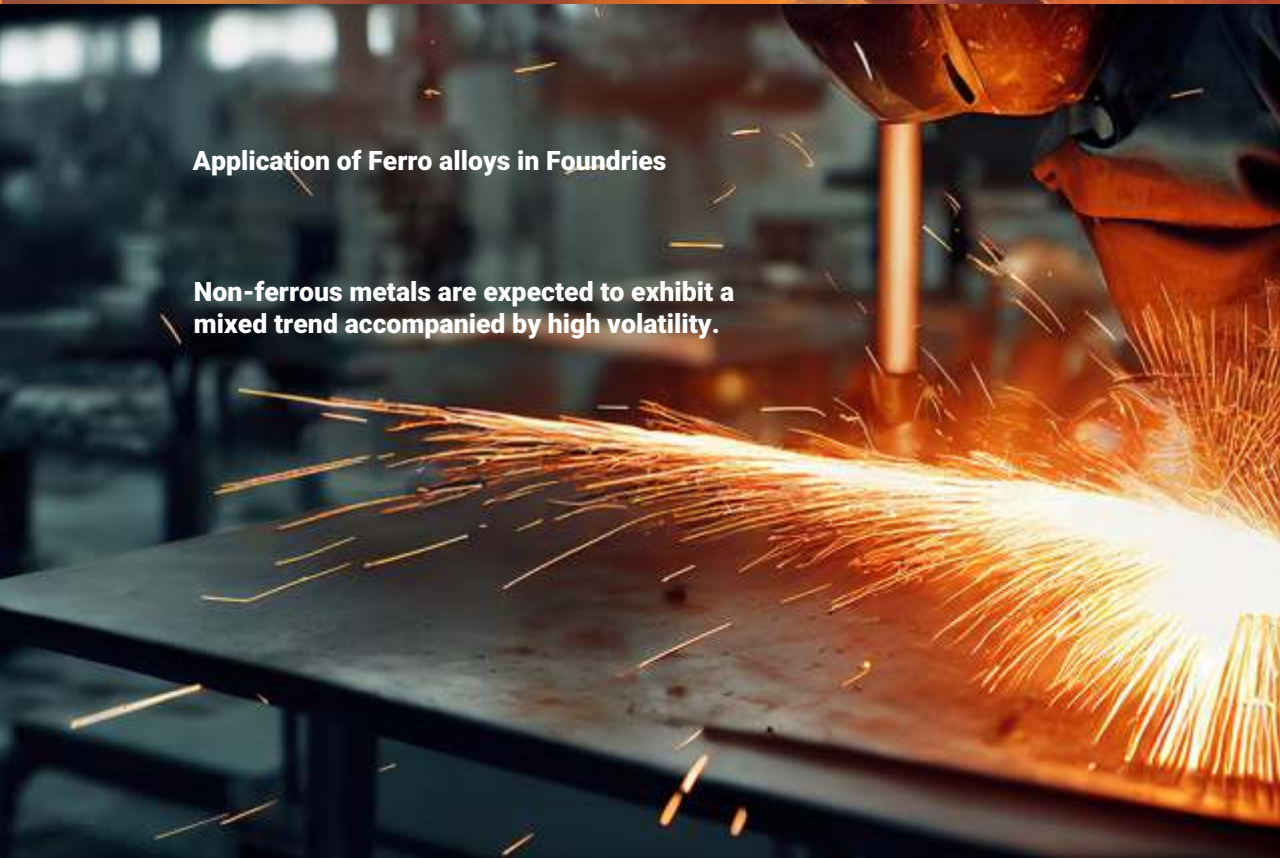
L. Pugazhenty
Executive Director, ILZDA,
Past President, IIM



Sandeep Ramesh
Chairman, The Metals
Recycling Committee of REIAI

Application of Ferro alloys in Foundries

Non-ferrous metals are expected to exhibit a mixed trend accompanied by high volatility.





TOPSEED[®] conditioner for a safer and more sustainable casting process

TOPSEED[®] conditioner has been designed as a cover material for MgFeSi alloys. It improves the Mg recovery, provides a calmer reaction and easily removable slag, resulting in consistent energy savings thanks to:

- Lowering the treatment temperature
- Reducing energy consumption required for the melts
- Adoption of a Tundish cover ladle minimizing the heat losses

Contact - +91-22-67761917
www.elkem.com/foundry
www.elkem.com/contact

Download
the brochure here



EDITOR

D. A. Chandekar
B.E. (Met.) DBM, DJMC

EDITORIAL BOARD

Amit Majumdar
R.T.Kulkarni
Sadguru Kulkarni

EDITORIAL ASSISTANCE

Swati Padave

PRODUCTION

Anita Chandekar

DESIGN & LAYOUT

Ace Graphics

MARKETING

Prachee More

Administrative Office

1, Alpha, M. G. Road, Vile Parle (E),
Mumbai - 400 057. India
Tel. : 91-22-2619 2376,
2617 1575 / 2617 1866

Email :

info@metalworld.co.in

Editorial : editorial@metalworld.co.in

Website : www.metalworld.co.in



facebook.com/pages/Metalworld
249596461861510



metalworldblog.wordpress.com



twitter.com/chandekar_d



linkedin.com/company/13450168



youtube.com/channel/
UC4vpElyHO-xqdavO40rXXlw



D. A. Chandekar Editor

Dear Readers,

The metals industry in India is dwelling on a strong foundation and is poised for a decent growth for atleast few years. As mentioned many times in this column, the economic growth of the country is dependent and driven by the infrastructure development and 'metals' is in the centre of the infra development process. Thus if the country has to grow on economic front, it has to give emphasis on infra projects and this will ensure the upward pull for the metals demand.

Though this is true for a long term view, in short term view the metals industry seems to be struggling. We also see a relatively low performance by the auto sector which also will have a negative impact on castings demand. Generally in the past few years it is seen that the metals and castings demand gradually picks up after Diwali and remains high till the fiscal year end, i.e. till the March end. The reasons are simple. In the monsoon the construction activity is considerably slowed down and thus the metals offtake decreases. This phenomenon reverses after the monsoon is over. Also the year end target pressure gradually increases in every company (including the automakers) and this also gives an upward push to the demand. But this year the metals demand seems to be following a different pattern. Why this

Editorial Desk



is so ?

Firstly, let us accept the fact that the international geopolitics has a definite and sizable impact on the businesses, industrial activity, international trade etc. and this is true for metals industry as well. Today the international situation is very delicate. The Ukraine – Russia war as well as the Israel's conflict with many groups and countries has made the situation in the Middle East quite unstable. This has made economies of many countries tremble and also affected the international trade in metals sector. Another factor is India's neighboring countries. Most of these countries including Bangladesh, Pakistan, Sri Lanka are struggling on the economic front. India used to have a sizeable trade with these countries which has now reduced considerably. In my opinion, these are some of the factors responsible for the current low performance of the domestic metals sector. Another factor is the 'green' revolution in the industry. This is also expected to reduce the international trade, especially in the EU region. We have earlier discussed this in detail in this column itself. Though India has registered its protest against the implementation of CBAM, most of the Indian mills are atleast today not in a position to monitor and to substantially reduce the carbon footprint before 2026.

Anyway, the long term future of the industry does remain bright and I am sure this temporary phase will end soon. May be the regime change in the US will trigger the change !

Write your comments :

<https://metalworlddac.wordpress.com>

Content

Face to Face

6 Dive into the latest trends and innovations in the Zinc and Lead industries



Dr Shantanu Chakrabarti,
Visiting Scientist,
DMSRDE (DRDO),
Kanpur



L. Pugazhenty
Executive Director, ILZDA,
Past President, IIM



Sandeep Ramesh
Chairman, The Metals
Recycling Committee
of REIAI

Technology



12 Application of Ferro alloys in Foundries

Dhiraj K. Chauhan

News Update



18 Benchmark for Copper Concentrate TCs to Fall



New Sponge Boosts E-Waste Gold Recovery 10x

News Update



20 Base Metals Dip Amid Demand Concerns



Vedanta Sets New Standard in Logistics Innovation



22 Jaya Hind Industries Launches 4400-Ton Die-Casting Technology in India



Innovative Solid-Phase Recycling for High-Strength Aluminum Scrap



24 Base Metals Prices Drop on LME as Stocks Face Outflows



The Role of Zinc in Enhancing Steel Infrastructure in India

Feature



28 Non-ferrous metals are expected to exhibit a mixed trend accompanied by high volatility.

Statistics

30 Passenger Vehicle dispatches rise by 4 pc in Nov as demand sustains post festive period: SIAM

Disclaimer :

The views and opinions expressed in the articles are solely of the authors. The Editor may not subscribe to these.

Feedback :

Your feedback / suggestions regarding the content will be appreciated
editorial@metalworld.co.in



Leveraging your success.

Energy and resource efficiency, sustainable transformation, additive manufacturing, lightweight construction, and e-mobility – these are the hot topics in our industry. Stay one step ahead and tackle them together with your reliable partner and local manufacturing. Our experts are at your side to find solutions that ensure your success.

Visit us
at **IFEX** in
Bangalore, India,
**Hall 4, Booth
B1** on February
2-4, 2024





Dive into the latest trends and innovations in the Zinc and Lead industries



Dr Shantanu Chakrabarti,
Visiting Scientist, DMSRDE (DRDO),
Kanpur



L. Pugazhenthay
Executive Director, ILZDA,
Past President, IIM



Sandeep Ramesh
Chairman, The Metals
Recycling Committee of REIAI

Mr .L. Pugazhenthay is the Executive Director of ILZDA and a Past President of IIM, with extensive leadership experience in industrial development and materials management. Dr. Shantanu Chakrabarti is a Visiting Scientist at DMSRDE (DRDO) in Kanpur, specializing in defense research and development. He contributes to advanced scientific projects aimed at enhancing defense technologies. Mr .Sandeep Ramesh is the Chairman of the Metals Recycling Committee of REIAI, leading initiatives in the recycling industry. He plays a key role in promoting sustainable practices within the metals sector. D.A.Chandekar, Editor & CEO of Steelworld magazine had an exclusive interaction with Mr. L. Pugazhenthay , Dr. Shantanu Chakrabarti, Mr. Sandeep Ramesh to understand more about How are the zinc and lead industries performing, What role does recycling play in the lead industry, What trends are emerging in the

lead industry regarding sustainability, What innovations are occurring in the lead and zinc industries, and how do they impact future applications.

1. How are the zinc and lead industries performing, and what are some of their evolving applications?

Zinc and lead are vital but often overlooked metals. Zinc is primarily used in galvanizing steel but also has applications in die-casting, auto parts, and batteries. Lead is mainly used in batteries and radiation shielding. Both metals have rich histories, with zinc being distilled in India and lead used since ancient times, and they continue to evolve with new applications in various industries.

2. How has the use of lead evolved in recent years, particularly in industries like batteries and nuclear reactors?

Lead usage has been growing steadily,

especially in the battery sector, where demand for lead-acid batteries remains strong. Lead is also used in nuclear reactors for radiation protection and in compounds like lead oxide and salts. While some applications have declined, lead continues to be essential in industries such as cables and radiation shielding.

3. What role does recycling play in the lead industry, and how has the shift towards secondary lead impacted the market?

Recycling has become increasingly important in the lead industry, with secondary lead now making up a larger share of total lead usage. Many manufacturers, particularly in Japan and India, have shifted from primary to secondary lead due to its effectiveness and sustainability benefits. This shift reflects a global focus on resource conservation and sustainability.

4. How have advancements in

Foundry Products for Non-Ferrous Metals

Since 1856, Morgan Molten Metal Systems is a pioneer and a global leader in supplying technically advanced range of foundry products to Non-Ferrous Foundries.



Syncarb Z2e²



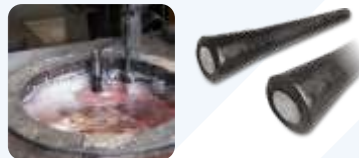
Suprex-E Plus



BNI



Degassing Rotor & Baffle Plate



Degassing Tube



Blue Lightning

Complete Degassing Solution

Morgan has introduced a complete solution to degassing needs of the foundries.



Mobile Degassing Unit



Hoist-Able Degassing System



Reduced Pressure Tester



Density Index Measuring System



Morganite Crucible India Ltd.
(ISO 9001 Company)
B-11, M.I.D.C, Waluj, Aurangabad - 431136
Maharashtra, India

Contact:
vikramsinh.nalawade@morganplc.com
+91 93705 91146
Web: www.morganmms.com



Face to Face

technology impacted the prediction of fossil fuel depletion, and what environmental issues are associated with resource consumption?



In the late 1970s, it was predicted that fossil fuel resources would be depleted by the early 21st century. However, advancements in technology, especially in exploration and utilization, have delayed this depletion, although resources are still gradually diminishing. The environmental impact of resource consumption includes global warming, greenhouse gas emissions, and ozone layer depletion, with challenges in balancing the use of materials like steel to reduce carbon emissions in vehicles.

5. What trends are emerging in the lead industry regarding sustainability, and how is secondary lead influencing the market?

The lead industry is addressing sustainability by increasing the use of secondary (recycled) lead, which is now considered just as effective as primary lead. This shift reflects a broader trend toward resource conservation, especially in industries like battery

manufacturing. The growth in lead usage continues, particularly for applications in batteries and nuclear reactors, despite a decline in some other areas like solders.

6. How is the lead industry addressing challenges in battery recycling and what role does government policy play in supporting the sector?

The lead industry faces challenges from the informal sector, where old batteries are often diverted and sold without proper recycling, leading to environmental concerns and revenue loss. The Indian government has introduced measures like the Waste Battery Management Rules (VWMR) and Extended Producer Responsibility (EPR) credits to encourage formal recycling. Additionally, policy support for the industry, such as advocating for lifecycle costing in infrastructure projects and promoting galvanizing over cheaper alternatives, would help ensure long-term sustainability and competitiveness in sectors like construction and battery recycling.

7. How does the Free Trade Agreement (FTA) affect the lead and zinc industry in India, and what future outlook does the lead industry have in the country?

FTAs, such as with South Korea, create challenges for India's lead and zinc



industry by allowing cheaper imports of materials, disadvantaging domestic producers. To remain competitive globally, the industry needs to focus on improving recycling efficiency and securing better policy support, including reducing import duties on raw materials. The future of the lead industry in India looks promising, particularly in sectors like renewable energy storage, UPS systems, and telecom towers, where lead acid batteries continue to play a crucial role despite the rise of lithium.

8. How has the recycling industry in India evolved, and what role have government regulations played in this growth?

Over the past 15 years, India's recycling industry has matured significantly, with advancements in technology, such as automated machinery, pollution control systems, and environmentally friendly smelting processes. These improvements have boosted efficiency, yields, and recovery rates. Government regulations, including the Extended Producer Responsibility (EPR) scheme and updated Battery Waste



**AIKOH
CHEMICALS**

PRODUCT RANGE

- > Fluxes
- > Granular Fluxes
- > Tablet Grain Refiner
- > Tablet Degesser & NT Based
- > Master Alloy Ti, B
- > Mag Remover
- > Phosphoreus Copper
- > Coating G.D.C.
- > Die Release Agent H.P.D.C.
- > Plunger Lubricant
- > Copper & Brass Fluxes
- > Teeming Compound
- > Fluxes of Copper, Brass, Lead, Mg, Ferrous & Non Ferrous Metal

ABOUT US

- > Long Term Support
- > Strong R & D
- > Prompt Delivery
- > Consistent Quantity
- > 80 Years of Experience
- > Export to More than 25 Countries

- Technical Collaborations with M/s Aikoh Co. Japan.
- Sales & Distribution with M/s JS Chemical INC, USA
- Technical Collaborations with NTC Japan

SARU AIKOH CHEMICALS PVT. LTD.

A-2 INDUSTRIAL ESTATE, PARTAPUR, MEERUT - 250 103 INDIA

Tel : 0121-2440636, 0121-2440641, +91-7302000869, Fax : +91-121-2440644

E-mail: info@saruaikoh.com, customer.support@saruaikoh.com, Website :- www.saruaikoh.com





Management Rules, have incentivized formal recycling and helped establish a robust lead recycling network, making

of carbon in batteries and the development of longer-lasting alternatives. Zinc, particularly in alloys like zinc-aluminium-

10. What does the lead & zinc industry expect from the policy makers ?

Ans- The lead and zinc industries seek a regulatory framework that supports both economic growth and environmental sustainability. They expect clear, efficient regulations, incentives for innovation in green technologies and recycling, and investments in infrastructure like transportation and energy. Policymakers should ensure fair trade policies, reasonable health and safety standards, and tax regulations that foster growth. Addressing climate change with achievable emissions targets, promoting public education on the metals' value, and encouraging recycling are also key priorities. Ultimately, the industry relies on policymakers to create a stable environment that enables sustainable growth and global competitiveness. ■



India comparable to advanced countries in this sector.

9. What innovations are occurring in the lead and zinc industries, and how do they impact future applications?

Innovations in the lead battery sector focus on improving efficiency and reducing lead usage, including the exploration

magnesium-copper, is gaining traction in industries such as automotive, construction, and electronics. Zinc's future in galvanized products and specialized alloys looks promising, with developments enhancing corrosion resistance and durability, making it increasingly important in various sectors.

VAS

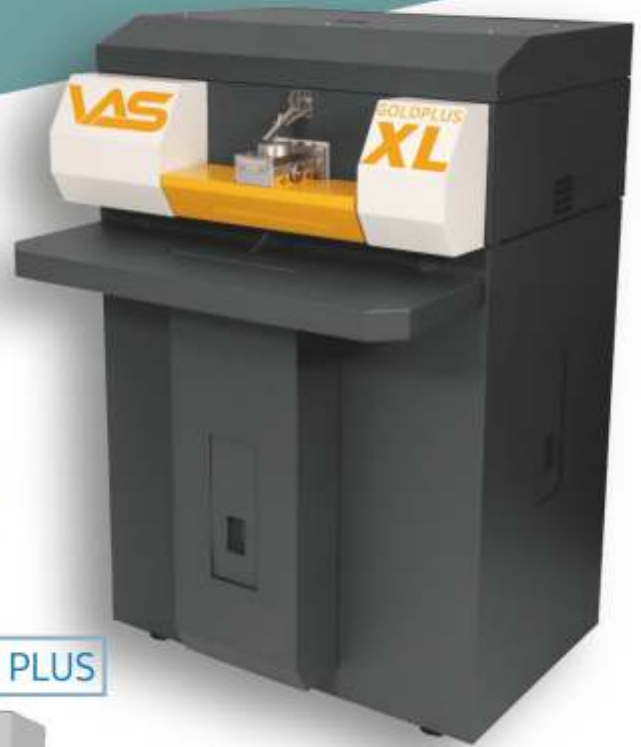
SPECTROMETERS



GOLD PLUS XL

METAL ANALYZER

Engineered for Tomorrow:
Innovating Steel Industry Solutions



GOLD PLUS X



SILVER PLUS



eMission



VAS SPECTROMETERS PVT. LTD.

Unit No 107, Bldg No 17,
Samhita International Complex
MTNL Lane Off. Sakinaka,
Andheri, Mumbai 400 072
INDIA

www.vasbharat.in
www.vasbharat.net
www.vasbharat.com



sales@vasbharat.com

LEADING INNOVATION IN SPECTROSCOPY



Application of Ferro alloys in Foundries

Introduction: Ferro alloys find extensive use in foundry for various specific purposes. Ferro alloys are used in cast iron foundry as an additive to moulding sand, as an inoculants for the production of graded cast irons, as an alloying element for the production of alloy cast irons, and also as an inoculant for the production of special cast irons such as S. G. iron, Malleable iron, compacted graphite cast irons. (Ref: When and how to choose ferro alloys for cast iron foundry. Authors- R. R. Dash, S. Ghosh, G. N. Rao. Authors are Scientists at NML, Jamshedpur).

Ferro alloys find extensive use in foundry because they are comparatively cheaper and considerably easier to add to the molten iron and steel. Further, their specific gravity and melting points approach those of iron and steel which facilitate their use. Since the pertinent member of a ferro alloy is the alloying element, the iron content is relatively not very important, thus, they are identified generally by the principal base metal present. In any particular ferro alloy, gradation is normally done according to the percentage of the base metal present, further gradation or subdivision is usually based upon the specific elements of technical importance like

carbon, silicon, phosphorous, sulphur, etc. From the point of view of use they are classified into two main classes the conventional ferro-alloys and the special ferro alloys. Conventional ferro alloys like, Fe-Mn, Fe-Si, Fe-Cr have been in use for a long time while special alloys such as Fe-Mo, Fe-V, Fe-Ti etc. have been developed recently to cater to the special needs of Iron and Steel production.

In a cast iron foundry ferro alloys are used for the following purposes 1) As an additive to moulding sand 2) As an alloying element, either in furnace or ladle for production of alloy cast iron.

3) As an inoculant for the production of special cast irons such as S. G. Iron, Malleable iron, compacted graphite cast iron, etc.



Dhiraj K. Chauhan
Director: METCON-
Metallurgical
Consultants

self set moulds. However, due to some disadvantages such as defects produced by liberated hydrogen and availability of cheaper hardeners, the process has become less popular.

2) Ferro alloy additions in melt preparation: The selection of a particular grade of ferro alloy for use as alloying addition depends upon the type of melting unit employed, the alloy composition and the specification of the castings to be produced. In jobbing foundries where a cold blast cupola is available, ferro alloys such as Fe-Si, Fe-Mn which are higher in Si and Mn are preferred due to their lower melting temperatures. Ferro alloys can either be added in cupola or in the ladle. In the later case excessive loss of ferro alloys can be prevented.



Fig.1: Induction furnace for C.I. melting

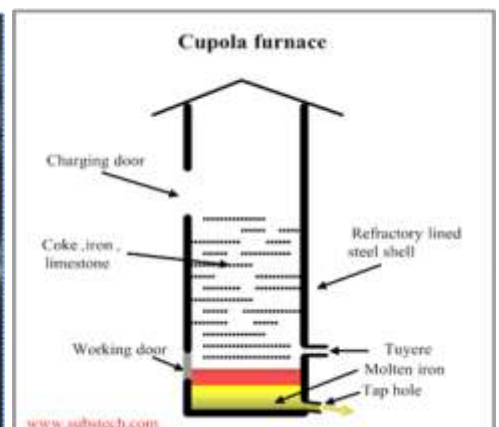


Fig.2: Cupola furnace for C. I. Melting

1) Though use of ferro alloys in mould preparation is un-usual, Fe-Si is used as a hardener for sodium silicate bonded sands to produce

The losses encountered during Cupola melting are as shown in Table 1. In modern foundries where electrical melting units are available, additions of ferro

When You Think Foundry..... Think KELSONS...!

KELSONS[®]
GROUP OF INDUSTRIES

MADE IN
INDIA

KELSONS METALLURGICAL EQUIPMENT



KELSONS TESTING EQUIPMENT



EXPORTS : Malaysia, ,Syria, Dubai, Iran, Saudi Arabia, Thailand, Egypt, Uganda, Germany, Baharin, Turkey, South Korea, Bangladesh, Nigeria, Oman, South Africa, Croatia, Finland, Vietnam

E-22, G-35, M.I.D.C. Shirol, Kolhapur - 416 122 Maharashtra. (INDIA) Cell : +91 9822112162 / 9422582869
E-mail : mkt.kelsons@gmail.com / sales@kelsonslab.com Website : www.kelsonsgroup.com

We Also Manufacture Foundry Machinery, Metal Testing Equipment.



Technology

alloys can be made late in the furnace for higher recovery.

grey iron foundries, though low carbon variety has added advantage when used in



Fig.3: Ferro silicon



Fig.4: High Carbon Silico Manganese

Elements in Ferroalloy	Impurity
Titanium	0.01-0.02
Phosphorus	0.005-0.01
Disphosphorus	0.01-0.02
Uranium	0.01-0.04
Neoprene	0.01-0.02
Wobojvn	0.01-0.02

Table 1: Loss of Ferro alloys in Cupola

3) Selection of ferro alloys: Ferro alloys like Fe-Si, Fe-Mn, Fe-Cr, Fe-Mo, Fe-Ti, Fe-V, are extensively used in the process control of grey iron melts to obtain special characteristics and produce castings to particular specifications. In case of Fe-Si, low grade as well as high grade is in use in the foundries. Apart from the silicon content, size as well as composition, especially the aluminium content of the ferro alloy should be within specified limits. The aluminium content should not exceed 1.0%. 60% Si grade is used for bulk furnace additions in lump form, while 75% or 85% silicon grades are used for ladle additions. High carbon ferro-manganese containing 70% manganese is used in

large quantities as they have low phosphorous content facilitating final adjustment. Normally lumps are used for furnace additions while 4 to 15 mm sized ferro alloys are used for ladle additions. Pearlite is stabilized using small quantities of Fe-Mn along with Tin. Ferro chrome is a carbide former and when used in small quantities increases tensile strength and hardness. Usually high carbon ferro chrome is used in lump form for furnace addition and for ladle addition, 50 mm size is used. Fe-Mo is added to impart high wear resistance. Molybdenum is specially effective in strengthening and hardening irons because of its property of causing

austenite to transform to fine pearlite or bainite. Lumps are used for furnace additions while crushed to 20 mm size is used for ladle additions. The behaviour of titanium, when Fe-Ti is added is similar to aluminium. Titanium added up to 0.05 to 0.25% promotes graphitization, reduces chilling tendency and refines the graphite flake size. Above this value, however, increasing titanium percentages results in the formation of titanium carbide, which is stable even at high temperatures. Vanadium acts as a carbide former when added as Fe-V. Small additions to the extent of 0.05% increase the strength, hardness, and impact strength of grey irons.

4) Use of Ferro-alloys in alloy cast irons:

a) Alloy cast irons are classified depending on their specific use as corrosion resistant, heat resistant and wear resistant cast irons. Silicon as Fe-Si when added to cast iron in the range of 6 to 8% Si imparts better resistance to scaling compared to ordinary irons. With 13 to 18% Si, cast irons develop resistance to acid corrosion.

b) Chromium is the principal alloying element which imparts wear resistance; chromium addition in wear resistant cast irons varies from 2 to 28%. In addition to chromium, manganese up to 3% is also used along with Cu, Mo, V and Ti.

c) Application of Magnesium: Ferro-alloys are being extensively used for making master alloys for the production of spheroidal graphite cast iron. S. G. cast



Innovative Foundry Solutions

Modern castings need cores of all complexity. **Gargi Hüttenes-Albertus** products combine excellent performance, consistency and environmental compatibility to add value to your casting.



Our goal is to minimize foundry environmental impact throughout our product's life cycles, with an ongoing commitment to continuous improvement.

Gargi Hüttenes-Albertus Private Limited

1502 Vikas Centre, 15th Floor, Dr. Chaitram Gidwani Road,
Chembur, Mumbai - 400074. Maharashtra, India.

☎ +91 (022) 68785656 ✉ gargiha@ha-group.com 🌐 www.ha-group.com
📱 [HuettenesAlbertusGroup](https://www.facebook.com/HuettenesAlbertusGroup) 📷 [#huettenesalbertus](https://www.instagram.com/huettenesalbertus)



Technology



Fig.5: Molten Iron pouring in mould

iron is essentially a cast iron in which graphite is present in the form of tiny balls or spherulites rather than flakes as in normal grey iron. This shape of graphite can be obtained by inoculating grey iron with Mg. Since Mg is a very reactive metal and its vapour pressure is very high at the temperature of the molten cast iron, it is added in the form of a master alloy.

The Ferro alloy Industry's present capacity is around 5.15 Million Tonnes. The

products covered are: Manganese Alloys (HC, MC and LC Ferro Manganese and Silico Manganese), Ferro Silicon, Chrome Alloys (HC,MC & LC Ferro Chrome, Silico Chrome and Charge Chrome), Noble Ferro Alloys



(Ferro Molybdenum, Ferro Vanadium, Ferro Tungsten, Ferro Silicon Magnesium, Ferro Boron, Ferro Titanium,

Ferro Aluminium, Ferro Silico Zirconium, Ferro Nickel Magnesium) etc. Thus, the Ferro Alloys Industry, considered to be a vital industry.

Major manufacturers of Ferro alloys in India are as

under:

(1) FACOR ALLOYS LIMITED
Tumsar- 441912, Dist.
Bhandara. Maharashtra.

Standard Grade High Carbon Ferro-Manganese, Low Carbon Ferro-Manganese, Ferro-Silicon, and Special Iron Phosphorous.

(2) Andhra Ferro Alloys Limited, Shivamogga- 577204, Karnataka.

High carbon Ferro chrome and Silico Mnaganese Ferro alloy.

(3) SHIVAM HI TECH STEELS PRIVATE LIMITED. BHILAI, DURG. CG.

Ferro Alloys, Ferro Aluminum & Titanium.

(4) Thermit Alloys Private Limited N-7, Industrial Estate, B. H. Road (Sagar Road) Shivamogga, Karnataka.

Manganese based Ferro alloys. ■





“WE
PACK”

ANY THING, ANY SIZE, ANY SHAPE”

Trusted Veteran In Providing Top Quality Packaging Solutions

Innovative engineered packaging solutions inspired by excellence

Newel Packaging delivers innovative solutions that help improve supply chain performance, facilitating the secure, swift and efficient transit of goods without impacting material integrity.

Newel Packaging is creating new benchmarks in the protective packaging industry. We specialize in the design & manufacture of Nail-less Packaging Boxes, a smart solution that is finding wide acceptance owing to its flexible design, high reusability and exceptional quality (ISPM15 standards).



Nail-less Packaging Boxes



Plywood Packaging Boxes



Heavy Duty Packaging Boxes



Plywood Pallets



Wooden Pallets

NEWEL PACKAGING PVT LTD

UNIT 1

Plot No. 203, Vasantdada Industrial Estate, Sangli 416416.

UNIT 2

Plot No. 109, 110, 111, Vasantdada Industrial Estate, Sangli 416416.

(+91) 233 2310424

(+91) 905 957 1111
(+91) 942 125 4097



✉ piyush@newelpackaging.com
nitin@newelpackaging.com
sales@newelpackaging.com

www.newelpackaging.com



Benchmark for Copper Concentrate TCs to Fall



Copper concentrate treatment charges (TCs) are expected to remain low in 2025 due to a tight market, according to industry sources. Although discussions are still in the early stages, the benchmark TCs are predicted to fall to between \$20 and \$30 per tonne, far below last year's \$80 per tonne. Fastmarkets expects a benchmark of \$30.30 per tonne, plus or minus 10%. This year, TCs dropped to record lows, with Fastmarkets' copper concentrate TC index reaching a historic low of \$(5.00) per tonne in June. A low TC usually signals tight supply and high demand for concentrates. Contributing factors include a mine closure at Cobre Panama and subdued production elsewhere, alongside an expansion of smelter capacity, especially in China, putting further pressure on TCs. For 2025, more smelter capacity is expected to come online in Indonesia, China, and India, but copper concentrate supply is unlikely to improve significantly. Many expect the benchmark to stay below \$30 per tonne, with large mining companies budgeting for around \$30. Some sources point to mid-year deals at even lower levels, like Antofagasta's agreement at \$23.25 per tonne, and suggest there's little reason to expect higher TCs. Smelters are prepared to accept these lower TCs as they compete to secure tonnage. Some smelters are even willing to undercut the benchmark to guarantee supply. Traders also play a role, with some sources noting that if the benchmark goes above \$30 per tonne, traders may buy long-term contracts and sell at lower spot prices. In response to these low TCs, some smelters may cut production or delay commissioning new facilities, potentially leading to lower utilization rates or extended maintenance.

New Sponge Boosts E-Waste Gold Recovery 10x



Researchers at the National University of Singapore have created a groundbreaking nanoscale composite material that significantly enhances gold extraction from e-waste, achieving efficiency levels ten times greater than existing methods. This innovative sponge, composed of two-dimensional graphene oxide and one-dimensional chitosan macromolecules, offers a cleaner and more cost-effective solution to an industry known for its low yields and toxic byproducts.

Traditionally, extracting gold from electronic waste has been a challenging process, often resulting in environmental pollution. However, the new material, developed through self-assembly techniques, can not only extract but also reduce gold ions without the need for external power sources. The researchers reported impressive results, with the sponge capable of extracting about 17 grams of Au³⁺ ions and over 6 grams of Au ions per gram of material, marking a significant advancement over previous extraction processes. The study, published in the *Proceedings of the National Academy of Sciences*, highlights the composite's dual functionality: it serves both as a gold ion scavenger and a reducing agent. The innovative architecture of the material allows for effective chemisorption and chemical reduction of gold ions, relying on the natural kinetics of the process rather than applied voltage. This mechanism is facilitated by multiple binding sites within the composite, leading to exceptionally high extraction efficiency.

Overall, this development not only addresses the challenges of gold recovery from e-waste but also provides an economic incentive by turning discarded materials into valuable resources. The approach represents a significant step forward in making e-waste recycling more sustainable and efficient.



**STEEL
FAB**

**MACHINERY
TECHNOLOGY
EQUIPMENT**

20TH EDITION

**13 - 16
JANUARY 2025**

Expo Centre Sharjah
United Arab Emirates

Organized by:



Supported by:



**MENA's leading
premier TRADE
event for the
metalworking,
manufacturing &
steel fabrication
Industry**



Featuring:



SHEET METAL CUTTING



SURFACE PREPARATION & FINISHING



WELDING & CUTTING



CNC MACHINE & POWER TOOLS



TUBE & PIPE



3D, AI & ROBOTICS

steelfabme.com

@SteelFabME



Base Metals Dip Amid Demand Concerns



Prices of most base metals fell on Wednesday, driven by demand uncertainty amid mixed Chinese economic data. Market participants also awaited the U.S. Federal Reserve's interest rate decision.

Three-month copper on the London Metal Exchange (LME) dropped 0.2% to \$8,970 per metric ton by 0736 GMT. The January copper contract on the Shanghai Futures Exchange (SHFE) fell 0.8% to 73,930 yuan (₹603,614) per ton by the close of Asia afternoon trading.

The dollar remained steady as investors anticipated the Fed's decision on a potential hawkish rate cut, with other central bank meetings also scheduled this week. A Fed rate reduction often lowers borrowing costs, boosting economic activity and increasing demand for metals, which could raise prices.

"Mixed Chinese economic data this week continued to weigh on base metals sentiment, despite reports of Chinese leaders aiming for a 5% growth target next year," said ANZ Research. While China's industrial output improved slightly in November, retail sales were disappointing, pushing Beijing to ramp up stimulus measures. China is also facing increased pressure from U.S. trade tariffs under a potential second Donald Trump administration.

China's leaders recently agreed to raise the budget deficit to 4% of GDP for next year, the highest on record, while maintaining a 5% growth target.

LME aluminum fell 0.5% to \$2,530.5 per ton (₹211,792), tin was mostly unchanged at \$29,050 (₹2,377,888), nickel rose 0.1% to \$15,515 (₹1,283,498), while zinc declined 1.2% to \$3,000 (₹248,825), and lead fell 0.5% to \$1,975 (₹164,329).

SHFE aluminum slipped 0.6% to 19,925 yuan (₹164,329) per ton, tin eased 0.5% to 245,620 yuan (₹2,022,123), nickel dropped 1.7% to 123,670 yuan (₹1,015,935), zinc shed 1.5% to 25,240 yuan (₹207,405), and lead fell 1.2% to 17,295 yuan (₹142,438).

(\$1 = 7.2850 Chinese yuan, ₹1 = 0.012 INR per CNY)

Note: The conversion rate used for the values in Indian rupees is based on the current approximate exchange rate for yuan and USD. This might fluctuate based on the market rates.

Vedanta Sets New Standard in Logistics Innovation



Vedanta Aluminium, India's largest aluminium producer, has launched a groundbreaking Logistics App developed in partnership with Krishca Strapping Solutions. This marks a major step in the company's digital transformation, aimed at improving its transport loading and lashing operations. The app is designed to tackle key operational challenges by enhancing efficiency, standardizing processes, and ensuring alignment with global industry standards. Key features include the ability to analyze and reduce vehicle turnaround time (TAT), optimizing logistics operations for increased productivity. Additionally, the app incorporates cloud-based data storage for secure, scalable, and easily accessible operational data, and provides real-time access to critical information, enabling faster decision-making and improving operational outcomes.

The app's launch is a part of Vedanta Aluminium's broader strategy to integrate advanced technologies into its operations while focusing on sustainability. Sunil Gupta, the company's COO, highlighted that this innovation will streamline Vedanta's logistics processes and reflect its commitment to operational excellence and continuous improvement. Rajesh Gupta, Managing Director of Krishca Strapping Solutions, emphasized the app's role in not only optimizing efficiency but also supporting Vedanta's sustainability goals. Vedanta's dedication to exploring new technologies is evident in its leadership in the aluminium industry and its commitment to reducing environmental impact. The company's efforts are reflected in its top ranking in the S&P Global Corporate Sustainability Assessment 2023, further reinforcing its focus on responsible and sustainable practices. With world-class facilities across India, Vedanta Aluminium is set to drive the future of the aluminium industry towards greater efficiency and sustainability.



Since 1933

BOMBAY METAL EXCHANGE LTD

CONCLAVE

2025

CONNECT | COLLABORATE | ELEVATE

3RD 4TH & 5TH JANUARY 2025
THE WESTIN, POWAI, MUMBAI

300 +

DELEGATES
ALREADY REGISTERED

REGISTER
NOW



SPONSORS

PLATINUM SPONSOR

POLYCAB
BEAS CONNECTED

GOLD SPONSOR



SILVER SPONSOR

RR SHRAMIK

EVENT PARTNER

TODINI
Cup

INTERNATIONAL EVENT SPONSOR

Aston
LIFE OF CONSTRUCTION

DELEGATE KIT SPONSORS

VIDYA

LANYARD SPONSORS



CONFERENCE SPONSORS

SUNITE GROUP
SUNITE GROUP OF COMPANIES

EXHIBITION SPONSORS

N NAKODIA GROUP
OF COMPANIES

GALA DINNER DAY 1 SPONSOR



GALA DINNER DAY 2 SPONSOR



KNOWLEDGE PARTNER

MCX
METAL & ENERGY
Trade with Trust
Digitized under M.S.E.D.

ASSOCIATION PARTNERS



INFNIMA

ILZDA



SUFI
Steel Users Federation of India



MEDIA PARTNERS



Minerals & Metals
Review

Since 2001
METALWORLD
Specialty in Ferrous & Non-Ferrous Metals Industry



argus
argusmedia.com

EXHIBITORS

POLYCAB
BEAS CONNECTED



RR SHRAMIK

TODINI
Cup

Aston
LIFE OF CONSTRUCTION

VIDYA



SUNITE GROUP
SUNITE GROUP OF COMPANIES

N NAKODIA GROUP
OF COMPANIES



VM
VARANASI METAL
INDUSTRIES

MH
ANALYTICAL

DVR
ANALYTICAL INSTRUMENTS

FOR DETAILS CONTACT : +91 8879270603 / info@bme.in



Jaya Hind Industries Launches 4400-Ton Die-Casting Technology in India



Jaya Hind Industries Pvt. Ltd., a part of the Dr. Abhay Firodia Group, has made a major leap in manufacturing by installing India's largest 4400-ton high-pressure die-casting machine at its Urse facility near Pune. This state-of-the-art machine, sourced from Buhler-Switzerland, sets new benchmarks for producing complex aluminium structural components, catering to the rising demands of the automotive and electric vehicle (EV) sectors. The 4400-ton die-casting machine enables Jaya Hind to manufacture a variety of critical structural parts, such as cradles, shock towers, housings, and advanced components for both electric and commercial vehicles. This advancement significantly boosts India's capacity to meet the global demand for lightweight, high-strength aluminium components.

Prasan Firodia, Managing Director of Jaya Hind Industries, expressed his enthusiasm, stating, "This achievement highlights our commitment to innovation and fulfilling the growing need for large, intricate parts in the EV and automotive industries. It's a proud moment for both our company and the Indian die-casting sector." With this new installation, Jaya Hind enhances its ability to serve both domestic and international OEMs, solidifying its role in the advancement of aluminium manufacturing. The expanded capacity not only supports India's evolving EV industry but also strengthens the country's position as a global leader in die-casting technology.

Founded in 1947, Jaya Hind Industries has been at the forefront of aluminium die-casting since 1964. The company operates facilities across Maharashtra, Tamil Nadu, Madhya Pradesh, and Germany, and serves major clients such as BMW, Volkswagen, Cummins, Ford, and Tata Motors. It also holds a licensing agreement with KS-Huayu, Germany, for the production of cylinder blocks and structural components.

Innovative Solid-Phase Recycling for High-Strength Aluminum Scrap



Aluminum is widely used but its production causes 3% of global greenhouse gas emissions, mainly because of the energy-heavy Hall-Héroult process. Recycling aluminum helps reduce emissions, but impurities in the scrap often require adding primary aluminum to clean it, and traditional recycling methods still use a lot of energy. Friction extrusion is a promising, more efficient technique that was first developed for creating metal matrix composites. It works by using heat and pressure to create alloys without melting the material, saving energy. This study explored using friction extrusion to recycle and improve aluminum scrap in one step to create a stronger material.

The researchers used 6063 aluminum scrap mixed with zinc (Zn), copper (Cu), and magnesium (Mg) powders. They used special friction extrusion tools to push the materials through a small opening, creating two types of products: a Recycled Alloy made from only the aluminum scrap, and an Upcycled Alloy made from aluminum scrap mixed with alloying elements like Cu, Zn, and Mg to match the composition of a high-strength alloy (7075 aluminum). The upcycled alloy showed finer grains and stronger mechanical properties—more than double the strength of the recycled alloy—thanks to the lower temperature during the extrusion process. The analysis of the material's microstructure showed that the alloying elements were evenly spread throughout the aluminum, forming new phases that were not present in the recycled material. This method proves that low-cost, low-strength aluminum scrap can be turned into high-strength materials without melting, offering a more energy-efficient way to recycle aluminum and create advanced alloys that can't be made with traditional methods.



2025

INTERNATIONAL MATERIAL RECYCLING CONFERENCE

METAL | E-WASTE | BATTERY | ELV | TYRE | PAPER | PLASTIC

28, 29 & 30 JANUARY 2025 | NOVOTEL JAIPUR CONVENTION CENTRE

SUPPORTING MINISTRIES



MINISTRY OF MINES



MINISTRY OF STEEL



MINISTRY OF ROAD TRANSPORT AND HIGHWAYS



MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY



NITI Aayog



Digital India



LIFE

Lifestyle for Environment



GREENE

REGISTER

NOW!



ASIA'S BIGGEST MATERIAL RECYCLING CONVENTION & EXPOSITION



- Largest Gathering of Recyclers representing Global Recycling Industry
- Access Recycling Industry's latest Market Reports & Publication
- Build New Business Contacts
- Mega Networking Opportunity
- Represent Industry and Discuss Issues, Challenges & Way Forward
- Promote Business, Products, Technologies, Machinery, Services, etc.

DIAMOND SPONSORS



MEDIA PARTNERS





Base Metals Prices Drop on LME as Stocks Face Outflows



Base metal prices on the London Metal Exchange (LME) showed a generally negative trend, except for copper, which rose by 0.11% day-on-day. LME-registered warehouse inventories saw outflows, with zinc stocks decreasing by 2.61% day-on-day. On the COMEX market, copper prices remained stable at \$9,180 per tonne. In India's non-ferrous metal markets, domestic copper armature scrap was assessed at INR 740,000 per tonne ex-Delhi, while aluminum Tense scrap prices remained stable at INR 174,000 per tonne in Delhi and INR 175,000 per tonne in Chennai.

Globally, Singapore's non-oil exports grew by 3.4% year-on-year in November, led by a boost in electronics shipments. Japan's manufacturing sector contracted for the sixth consecutive month, while the services sector showed growth. In the US, manufacturing activity declined in December, though manufacturers remain optimistic for 2025. Oil prices edged up, with Brent crude at \$74.09 per barrel, and WTI crude rising by 0.20% to \$70.85. Natural gas prices increased slightly to \$3.22 per metric million British thermal unit. The dollar index rose by 0.11% to 106, with the Indian rupee recorded at INR 84.92 against the dollar.

The Role of Zinc in Enhancing Steel Infrastructure in India

India's ambition to become a developed economy is closely tied to robust infrastructure, where steel serves as a fundamental building block. As the world's second-largest steel producer in 2024, India's growth in steel production underscores its importance. However, steel's susceptibility to corrosion, especially in India's challenging climate, poses significant risks to the durability and safety of structures.

India's diverse climate, characterized by heat, high humidity, coastal salt exposure, and pollution, accelerates steel corrosion. With a 7,800 km-long coastline, large regions face extreme corrosive conditions. Corrosion

costs India approximately 5% of its GDP annually, a stark contrast to countries like Japan and Australia, where zinc-coated steel has reduced this figure to under 1.5%.

But it is not just coastal India that is susceptible to steel corrosion. A 2023 report by the International Zinc Association revealed the aggressive climatic impact on steel in inland India. Over an 8-year testing period, zinc-coated (galvanized) steel proved its resilience against corrosion, while steel without zinc-galvanisation corroded rapidly. According to the Ministry of Steel, adopting galvanized structures could prevent losses exceeding ₹1,000 crore annually in coastal areas.

Zinc galvanization involves applying a protective zinc coating to steel, creating a durable bond that shields it from corrosion. This process offers a dual benefit: sacrificial protection of zinc in preference to steel, and a robust barrier to protect steel against external elements. Zinc sacrifices itself to protect steel, effectively preventing red rust and extending the lifespan of structures to over 50 years in most environments.

Zinc galvanized steel offers durability against heat,



pollution, moisture, and mechanical damage while

Networking Steel & Metal Industry - Worldwide



Monthly Publication

Trade Shows

B2B Industry Portal

Industry Research

Strategic Consultancy

Complete Visibility in Global Iron & Steel Sector

Chandekar Business Media

STEELWORLD

Devoted to Iron & Steel Industry

Pvt. Ltd.

A Knowledge & Networking Company

METALWORLD

Devoted to Foundry & Non-Ferrous Metals Industry

1, Alpha, 1st Floor, M.G. Road, Vile Parle (East), Mumbai - 400 057. INDIA,

Tel : 91-22-26171575 / 26192376 / 26171866

Email : info@steelworld.com | info@metalworld.co.in

Website : www.steelworld.com | www.metalworld.co.in



News Update

ensuring long-lasting performance. Galvanized steel is also cost-effective as it incurs lower maintenance costs thereby increasing asset life and resulting in significant economic savings. Zinc galvanized steel is also highly versatile as it offers design flexibility making it suitable for diverse applications, including infrastructure, railways, and power transmission.

Compared to painted, non-galvanized steel, zinc-coated steel offers unmatched protection through its metallic bond. Even if the zinc coating is scratched, it self-heals, ensuring reliability across varied environmental conditions. Paints and surface coatings chip and peel, exposing steel to corrosion. A pin-head sized exposure of steel to the elements is enough to trigger the onslaught of



rust.

India's infrastructure push, encompassing public infrastructure such as railways, airports, highways, bridges, stadiums and smart cities, demands materials that can withstand harsh conditions. Non-galvanized steel used in such projects is prone to rapid degradation. In contrast, zinc galvanization provides a protective barrier that maintains structural integrity and safety over decades, reducing repair costs and safeguarding investments by the government, taxpayers, and the private sector.

Government programs like the National Infrastructure Pipeline and Gati Shakti Yojana prioritize durable materials like galvanized steel to meet global standards. These initiatives align with the Atmanirbhar Bharat vision by promoting domestically sourced zinc solutions, boosting local manufacturing and employment.

Zinc-coated steel is critical for renewable energy projects, including wind turbines and solar panel installations.

These structures, often exposed to harsh environmental conditions, require materials that ensure longevity and efficiency. Zinc galvanization enhances the lifespan of renewable energy infrastructure, supporting India's

transition to sustainable energy.

Zinc-galvanization is also critical in automotive industry as it saves consumers from corrosion in automobiles. Zinc galvanization forms a durable bond with steel, offering self-healing properties that ensure continued protection even if perforations occur. Research by the International Zinc Association and IIT Bombay suggests that non-galvanized vehicles can experience up to 65% corrosion within five years, whereas vehicles using galvanized steel see just 7% corrosion over the same period. Zinc-galvanized steel provides superior protection against harsh environmental conditions, making it essential for long-lasting vehicle durability.

Moreover, zinc's high recyclability aligns with principles of a circular economy, contributing to sustainability while reducing carbon footprint. Promoting zinc use across sectors such as automotive, pipes, and tubes furthers India's commitment to environmentally friendly practices.

As India aims to become the world's third largest economy, the role of zinc in protecting infrastructure is indispensable. By reducing the economic losses caused



by corrosion, improving structural reliability and longevity, and fostering sustainability, zinc galvanization supports India's vision of resilient and long-lasting development while creating world-class infrastructure.

Annual zinc consumption in India is expected to surpass 2 million tonnes within the next decade, underlining its growing importance. As the nation evolves into a developed economy, zinc will remain pivotal in ensuring safety, reliability, and prosperity for its citizens.

Zinc galvanization represents a strategic and sustainable solution to India's infrastructure challenges. Its ability to protect steel from corrosion, enhance longevity, and support renewable energy initiatives makes it a cornerstone of India's growth story. As the country builds strong foundations for a brighter future, zinc will play a vital role in shaping a resilient and sustainable economy.



Vedanta Aluminium Achieves 2nd Rank in S&P Global Sustainability List



Vedanta Aluminium, India's largest aluminium producer, has earned global recognition for its exceptional sustainability efforts by securing second place in the S&P Global Corporate Sustainability Assessment (CSA) for the aluminium sector. With a strong ESG score of 77, the company has demonstrated its commitment to sustainability across key environmental, social, and governance parameters. This achievement is particularly noteworthy as it marks the fourth consecutive year that Vedanta Aluminium has ranked among the top companies worldwide in these prestigious assessments. The S&P Global CSA is a highly regarded set of benchmarks that evaluates companies based on their performance in economic, environmental, and social areas. The S&P Global ESG Score measures how well a company manages material ESG risks, opportunities, and impacts, based on a combination of company disclosures, media and stakeholder analysis, modeling, and in-depth engagement with the company. This recognition underscores Vedanta Aluminium's leadership in integrating sustainable practices into its operations. Priya Agarwal Hebbar, Non-executive Director at Vedanta Limited and Chairperson of Hindustan Zinc, expressed immense pride in the company's achievement, noting that securing the second position globally reflects Vedanta Aluminium's unwavering commitment to sustainability. She also credited the dedication and passion of the company's teams, who work tirelessly every day to make a positive impact. Priya emphasized that the company's sustainability efforts go hand-in-hand with its broader goal of achieving Net Zero Carbon by 2050, creating long-term value for the planet and future generations through responsible and innovative practices. Sunil Gupta, COO of Vedanta Aluminium, also celebrated the company's performance, highlighting that the recognition reinforces Vedanta Aluminium's focus on embedding Environmental, Social, and Governance (ESG)

principles across all its operations. He pointed out that this milestone motivates the company to continue its efforts to achieve Net Zero by 2050, focusing on innovation, operational excellence, and responsible practices to create a sustainable future.

Since launching its ESG journey in FY2021, Vedanta Aluminium has made significant progress in reducing its carbon footprint and promoting sustainability. The company's efforts include achieving a 10.16% reduction in GHG intensity compared to its FY2021 baseline. It has also led impactful biodiversity and carbon reduction initiatives in Odisha through a strategic partnership with PwC India. Notably, Vedanta Aluminium became the first Indian aluminium smelter to digitally connect to the LME Passport platform, ensuring quality assurance and



compliance for metal shipments. The company has also recycled over 15 billion litres of water during FY2024 and uses 20 tonnes of biomass briquettes daily at its refinery, reducing CO₂ emissions by over 10,000 tonnes annually. Vedanta Aluminium's approach to achieving Net Zero combines both reducing its carbon emissions and offsetting its remaining footprint. The company is focused on increasing the share of renewable energy in its mix, enhancing operational efficiencies, and transitioning to low-carbon energy sources such as biofuels. Additionally, Vedanta Aluminium is creating significant carbon sinks through various environmental initiatives, reinforcing its commitment to a sustainable future.

As India's largest aluminium producer, Vedanta Aluminium manufactures more than half of the country's aluminium, producing 2.37 million tonnes in FY24. The company is also a leader in producing value-added aluminium products that play a critical role in helping industries reduce their carbon footprints and transition to cleaner energy. By maintaining responsible production practices, Vedanta Aluminium continues to drive a greener, more sustainable future for India and the world.



Feature

Non-ferrous metals are expected to exhibit a mixed trend accompanied by high volatility.

Over the past two months, the team at Bluglance Consulting has actively contributed to Metal World Magazine, sharing our insights and perspectives on the non-ferrous metals market. As we present our third article, we take a moment to reflect on the recent trends in these metals and the key messages we've communicated to the magazine's readers.

We have consistently highlighted the volatility in the metals market and the heterogeneity in their performance. Over the past two months, Aluminum and Zinc prices have held their gains at higher average levels, while Copper has shown vulnerability. Lead, typically known for its stability, has displayed unusual volatility but continues to hold steady near \$2000 per MT. Meanwhile, Nickel has been trading at multi-month lows, and Tin has lost its recent gains during this period.

In this article, we analyze the price performance of each metal in November 2024 compared to October, demonstrating the distinct lack of uniformity in market trends. We will explore the broad market dynamics and trends of each metal, with a particular focus on Copper and Zinc.
Aluminum:

In November 2024, aluminum experienced significant volatility, trading within a range of \$2485 to \$2732 per MT before settling at \$2599 per MT.

Initially, prices were buoyed by global alumina supply disruptions, particularly from



This policy shift fueled market speculation and heightened trading activity, amplifying price fluctuations. As the month progressed, aluminum prices retreated from recent highs amid growing concerns over Chinese export trends and a potential easing of alumina supply tightness. New alumina production capacity, expected to come online in 2025, is anticipated to balance the alumina market and curb the record-breaking price rally for the raw material used in



major producers like Guinea and Brazil, which drove up production costs for aluminum smelters. The situation was further exacerbated by the Chinese government's decision to cancel the 13% export rebate on aluminum products, effective December 1, 2024.

aluminum production. Additionally, higher alumina prices outside China have turned the country into a net exporter of alumina, further influencing aluminum prices, which remain critical to industries like transportation, construction, and packaging. Looking ahead, the aluminum market is expected to remain volatile in the medium term. While new capacity in 2025 may ease supply disruptions,

Al	Cu	Pb	Zn	Ni	Sn
2626	9547	2037	3035	15735	31375
2599	9015	2081	3108	16000	29040
-1.03%	-5.57%	2.16%	2.41%	1.68%	-7.44%

Note: LME 3M Fwd. MoM Performance, Nov 2024, Data: Telequote



the market is likely to stabilize at a more balanced level. Over the next 1–2 months, we anticipate a broader trading range for the 3M forward contract (the most active contract) between \$2400 and \$2650 per MT.

Copper:

Copper has been one of the most vulnerable metals in the market, second only to tin among its peers. Its price is highly influenced by macroeconomic factors. Recent developments, including weaknesses in the Chinese economy, underwhelming stimulus measures, yuan devaluation, and net investment outflows, have led to a sharp correction of over 5% in copper prices.

In the medium term, the copper market is expected to remain volatile,

particularly into early 2025. This is due to factors such as potential tariff hikes under Trump-era policies, economic headwinds in China, and delays in supportive EV policies, all of which could slow a broader recovery in global activity. For 2025, the refined copper market is anticipated to remain balanced, with flat demand from cyclical sectors offset by growth in decarbonization-related demand. This is expected to align with another year of below-trend growth in mine supply. Over the next three to five months, copper prices are likely to fluctuate within the range of \$8,700 to \$9,700 per metric ton (MT).

China's copper concentrate imports may experience slower growth in 2025 due to increased competition from rising primary smelting capacity outside China.

In summary, copper is expected to trade within a volatile and sideways range.

Zinc: Zinc has been trading steadily with a positive trend, recording a gain of over 2.5% in November compared to the previous month. Looking ahead, the zinc market is expected to remain balanced in 2025. Demand growth from emerging applications, such as decarbonization and renewable energy, is likely to be offset by slower growth in traditional sectors.

Zinc prices are projected to remain within a range-bound to slightly upward trajectory in 2025, driven by factors like global economic conditions, energy costs, and production trends. Prices are anticipated to fluctuate between \$2,600 and \$3,000 per metric ton (MT), assuming no major supply disruptions or significant changes in demand. ■



Passenger Vehicle dispatches rise by 4 pc in Nov as demand sustains post festive period: SIAM



Passenger vehicle dispatches from companies to dealerships rose 4 per cent year on year to 3,47,522 units in November with demand momentum sustaining post festive period in October, industry body SIAM said on Friday.

The overall passenger vehicle dispatches stood at 3,33,833 units in November last year.

Market leader Maruti Suzuki India dispatched 1,41,312 units to its dealers last month, an increase of 5 per cent as compared with 1,34,158 units in November last year. Hyundai Motor India dispatches declined to 48,246 units last month as against 49,451 units in the year-ago period. Mahindra & Mahindra sales stood at 46,222 units last month as compared with 39,981 units in November last year, a growth of 16 per cent.

Toyota Kirloskar Motor (TKM) registered a monthly sales volume of 25,586 units in November 2024, representing a 44 percent increase over the 17,818 units sold in the same month last year. In addition, the company exported 1140 units.

"Our diverse portfolio, spanning from hatchbacks to SUVs, continues to offer tailored mobility solutions that resonate with varying lifestyles," TKM Vice President, Sales-Service-Used Car Business Sabari Manohar said in a statement. The year 2024 has exceeded the company's expectations, he said.

Tata Motors recorded a 2 per cent year-on-year increase in passenger vehicle sales during November this year at 47,117 units.

Two-wheeler wholesales, however, declined by 1 per cent year on year to 16,04,749 units last month as compared with 16,23,399 units in the same month last year.

Scooter sales rose 12 per cent year on year to 5,68,580 units last month while bike dispatches fell 7.5 per cent to 9,90,246 units.

Moped wholesales rose 6 per cent year on year to 45,923 units last month as compared with 43,482 units in November 2023.

Total three-wheeler dispatches also witnessed a 1 per cent year on year dip to 59,350 units in November, Society of Indian Automobile Manufacturers (SIAM) said in a statement.

While commenting on November-2024 performance, Mr Rajesh Menon, Director General, SIAM said, "The demand momentum which was seen in October during the festive period has continued in November for the industry as a whole, although Two-Wheeler and Three-Wheeler segments witnessed minor de-growth in November 2024. Passenger Vehicles posted its highest ever sales of November in 2024 of 3.48 Lakh units, with a growth of 4.1% as compared to November 2023. Though Diwali festival did not fall in the month of November in 2024, the Two-Wheeler segment posted a sales of 16.05 Lakh units, crossing the 16 Lakh units mark for the first time in a non-Diwali November. However, there was a de-growth of (-)1.1% as compared to November of previous year for Two-Wheelers. Three-Wheelers marginally de-grew by (-)1.3%, as compared to November of last year, with sales of 0.59 lakh units in



Domestic Sales: Monthly

Category Segment/Subsegment	Domestic Sales (In Nos.)		
	November		
	2023	2024	% Change
Total Passenger Vehicles³	3,33,833	3,47,522	4.1%
Three Wheelers			
Passenger Carrier	48,007	47,725	-0.6%
Goods Carrier	9,281	9,809	5.7%
E-Rickshaw	2,563	1,527	-40.4%
E-Cart	292	289	-1.0%
Total Three Wheelers	60,143	59,350	-1.3%
Two Wheelers			
Scooters	5,09,119	5,68,580	11.7%
Motorcycles	10,70,798	9,90,246	-7.5%
Mopeds	43,482	45,923	5.6%
Total Two Wheelers	16,23,399	16,04,749	-1.1%
Quadricycle	63	0	-

³ BMW, Mercedes, JLR & Volvo Auto data are not available. Tata Motors Domestic Sales data included only in 'Total PV', detailed break-up is not available.

SIAM										
Segment wise Comparative Production, Domestic Sales & Exports data for the month of November 2024										
(Number of Vehicles)										
Category Segment/Subsegment	Production November	Domestic Sales			Exports					
		2023	2024	% Change	November					
		2023	2024	% Change	2023	2024	% Change	2023	2024	% Change
Passenger Vehicles*										
Passenger Cars	1,33,651		1,23,171	-7.8%	1,02,558	97,186	-5.2%	36,223	34,259	-5.4%
Utility Vehicles	1,86,123		2,17,137	16.7%	1,74,981	1,92,684	10.1%	17,499	25,711	46.9%
Vans	10,323		11,191	8.4%	10,226	10,589	3.5%	459	581	26.6%
Total Passenger Vehicles	3,30,097		3,51,499	6.5%	2,87,765	3,00,459	4.4%	54,181	60,551	11.8%
Three Wheelers										
Passenger Carrier	68,020		65,271	-4.0%	48,007	47,725	-0.6%	25,686	23,148	-9.9%
Goods Carrier	10,268		9,657	-6.0%	9,281	9,809	5.7%	460	291	-36.7%
E-Rickshaw	2,942		1,703	-42.1%	2,563	1,527	-40.4%	-	-	-
E-Cart	287		366	27.5%	292	289	-1.0%	-	-	-
Total Three Wheelers	81,517		76,997	-5.5%	60,143	59,350	-1.3%	26,146	23,439	-10.4%
Two Wheelers										
Scooters	5,42,500		6,18,170	13.9%	5,09,119	5,68,580	11.7%	40,381	44,964	11.3%
Motorcycles	12,33,816		13,12,717	6.4%	10,70,798	9,90,246	-7.5%	2,37,797	3,16,425	33.1%
Mopeds	40,889		47,122	15.2%	43,482	45,923	5.6%	36	768	2033.3%
Total Two Wheelers	18,17,205		19,78,009	8.8%	16,23,399	16,04,749	-1.1%	2,78,214	3,62,157	30.2%
Quadricycle	323		846	161.9%	63	-	-	300	720	140.0%
Grand Total	22,29,142		24,07,351	8.0%	19,71,370	19,64,558	-0.3%	3,58,841	4,46,867	24.5%

* BMW, Mercedes, JLR, Tata Motors and Volvo Auto data are not available
Society of Indian Automobile Manufacturers (13/12/2024)

SIAM										
Summary Report: Cumulative Production, Domestic Sales & Exports data for the period of April-November 2024										
Report I										
(Number of Vehicles)										
Category Segment/Subsegment	Production April-November	Domestic Sales			Exports					
		2023-24	2024-25	% Change	April-November					
		2023-24	2024-25	% Change	2023-24	2024-25	% Change	2023-24	2024-25	% Change
Passenger Vehicles*										
Passenger Cars	13,21,007		11,24,556	-14.9%	10,42,825	8,64,804	-17.1%	2,86,904	2,70,884	-5.6%
Utility Vehicles	17,13,984		19,67,206	14.8%	15,60,290	17,61,981	12.9%	1,52,608	2,22,347	45.7%
Vans	96,102		1,03,154	7.3%	96,987	99,924	3.0%	5,343	5,529	3.5%
Total Passenger Vehicles	31,31,093		31,94,916	2.0%	27,00,102	27,26,709	1.0%	4,44,855	4,98,760	12.1%
Three Wheelers										
Passenger Carrier	5,90,164		6,18,159	4.7%	3,80,179	4,16,719	9.6%	2,04,753	2,00,550	-2.1%
Goods Carrier	74,159		79,349	7.0%	70,731	75,851	7.2%	2,081	2,852	37.0%
E-Rickshaw	24,017		16,150	-32.8%	24,677	14,558	-41.0%	-	34	-
E-Cart	1,992		2,763	38.7%	2,249	2,791	24.1%	-	-	-
Total Three Wheelers	6,90,332		7,16,421	3.8%	4,77,836	5,09,919	6.7%	2,06,834	2,03,436	-1.6%
Two Wheelers										
Scooters	42,87,804		51,19,455	19.4%	39,64,293	47,87,080	20.8%	3,49,388	4,02,862	15.3%
Motorcycles	97,99,957		1,10,30,255	12.6%	79,74,760	87,88,829	10.2%	19,04,911	22,78,688	19.6%
Mopeds	3,20,001		3,59,661	12.4%	3,19,551	3,58,096	12.1%	1,098	5,094	363.9%
Total Two Wheelers	1,44,07,762		1,65,09,371	14.6%	1,22,58,604	1,39,34,005	13.7%	22,55,397	26,86,644	19.1%
Quadricycle	2,911		4,713	61.9%	603	111	-81.6%	2,378	4,598	93.4%
Grand Total	1,82,32,098		2,04,25,421	12.0%	1,54,37,145	1,71,70,744	11.2%	29,09,464	33,93,438	16.6%

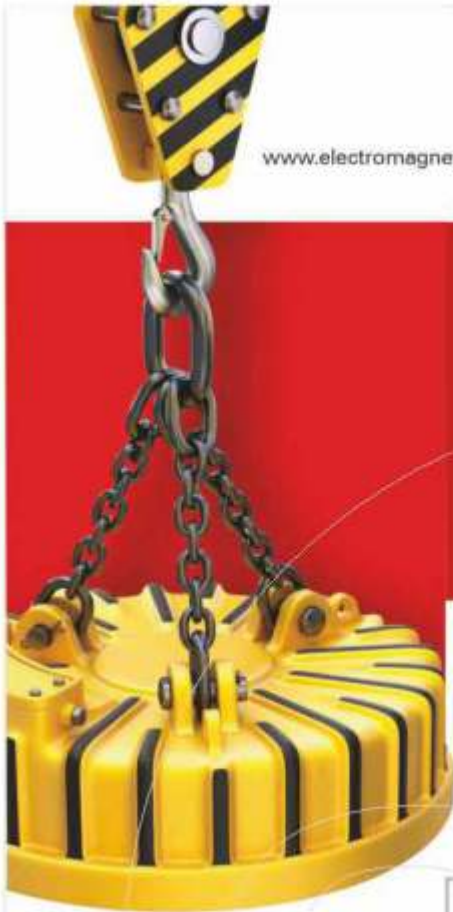
* BMW, Mercedes, JLR, Volvo Auto data is not available and Tata Motors data is available for Apr-Sep only
Society of Indian Automobile Manufacturers (13/12/2024)

www.electromagneticindia.com



A COMPLETE SOLUTION FOR STEEL INDUSTRIES

Electro magnetic industries for over 43 years, have lead the industry in producing Magnetic Separator/Vibrating equipments for the control and removal of ferrous tramp metal from product movement and processing system.



RECTANGULAR LIFTING ELECTRO MAGNETS



ELECTRO HYDRAULIC ORANGE PEET GRAB



VIBRATORY FURNACE CHARGER



FURNACE LINING VIBRATOR



HYDRAULIC PUSHER



OUR PROJECTS



Corporate office & Works :
Plot No: 1, Unit: 2, GIDC Industrial Estate,
Por-Ramangamdi, Vadodara 391 243,
Gujarat, India

🌐 www.electromagneticindia.com
✉ sales@electromagneticindia.com

☎ +91-937-621-9322
☎ +91-982-502-8823
☎ +91-932-724-5492

**REPRESENTATIVES / AGENT REQUIRE
FROM ALL OVER THE WORLD**



TECHNOLOGICAL PERFECTION | GLOBALLY WITH RELIABILITY | EXPERIENCE AND EXPERTISE