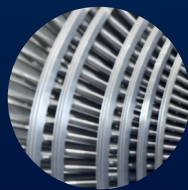


ACTIVITY
REPORT
2020



icda^{Cr}

INTERNATIONAL CHROMIUM
DEVELOPMENT ASSOCIATION

2020

MISSIONS & VALUES

Representing the chromium industry worldwide and across the value chain since 1984, the International Chromium Development Association promotes sustainable uses of chromium in innovative applications and provides health, safety and environmental studies as well as independent market research. It is the reference organization for whoever is interested in chromium.

The ICDA and its members are committed to sharing best practices, the association works to unite the industry around the common goal of continuous improvement.

- We are guided by our mission and values
- Acting responsibly to protect people and the environment
- Developing the market sustainably
- Sharing scientific and technical information
- Serving our members
- Providing benchmark knowledge

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We are looking at the future with confidence



Phoevos Pouroulis
ICDA President
Tharisa Minerals

2020, the world was facing unprecedented challenging times, continuing to impact people's lives, but what will be the new normal after the Covid-19 crisis ? The Corona virus could have stopped the ICDA's recent revival but the adaptability of our organization helped us in our continuation towards the strategic goals we established at the beginning of my mandate.

We took immediate action to protect the health of our delegates and employees by replacing travels with the fast development of online services. We know that networking is even more vital for businesses at this time of very limited social interaction and we are proud to have offered regular webinars and online conferences to our

members almost instantly. Sustainability remained and remains a priority at the top of our list. In addition to raising awareness during workshops, with some of the best experts on these questions available to us, we have joined several industry initiatives in the field of environmental protection and social responsibility. The ICDA is now a co-financer of a water project, whose goal it is to gradually replace non-efficient public water distribution systems using stainless steel pipes and enabling saving of millions cubic meters of fresh water annually. Stainless steel provides no leakage and safe and hygienic water distribution.

We have actively continued to collect emissions' related data for the production of HC FeCr and within the framework of the related life cycle assessment, which will be published early 2021. An insightful report co-authored with our Team Stainless partners and the University of Yale (USA) was released and concluded that whilst 100% of stainless steels are recyclable, 85% have been recycled in 2015 (year of reference for the research). Initiatives have also

been launched in non-metallurgical applications and we are pleased to support the environmental and social program developed by the Leather Working Group and the European Committee for Surface Treatment, with the ICDA being an active member of both these organizations.

What we are most proud of for the year 2020 is the announcement of a Responsible Chromium Program in partnership with Ecovadis. Few industry associations have taken such a courageous decision to directly assess the CSR performance of producers. We believe in leading by example and that this strong action will surely encourage continuous improvement across our industry value chain.

The pandemic situation has shown our strengths, we have developed new ways of considering and executing our mission and grown our service offering without any extra cost for our Members given the sound financial management of the ICDA. We are looking at the future with confidence and look forward to these developments with your support.



KEY FIGURES 2020



01

SUSTAINABILITY

Responsible Chromium

Raw materials are used in a wide range of applications that are directly and indirectly part of the life of millions of consumers across the globe. It is essential that we produce and sell our products in a sustainable and responsible way. It is our goal to ensure that our industry understands the urgency and shares our commitment to sustainability.

The first step in our roadmap is to develop transparency around producers' CSR performances.

ICDA has chosen Ecovadis, a global CSR rating company based on international standards, to conduct individual sustainability performance assessment of the industry. We will progressively extend the assessment to become a criterion for ICDA membership in the near future.

We will commence voluntarily with a select number of companies and hope that most of our membership will be covered in the very near future.

This program will help all of our learnings, allowing us to take fast, remedial actions to improve our practices whilst reinforcing our strengths.





Water

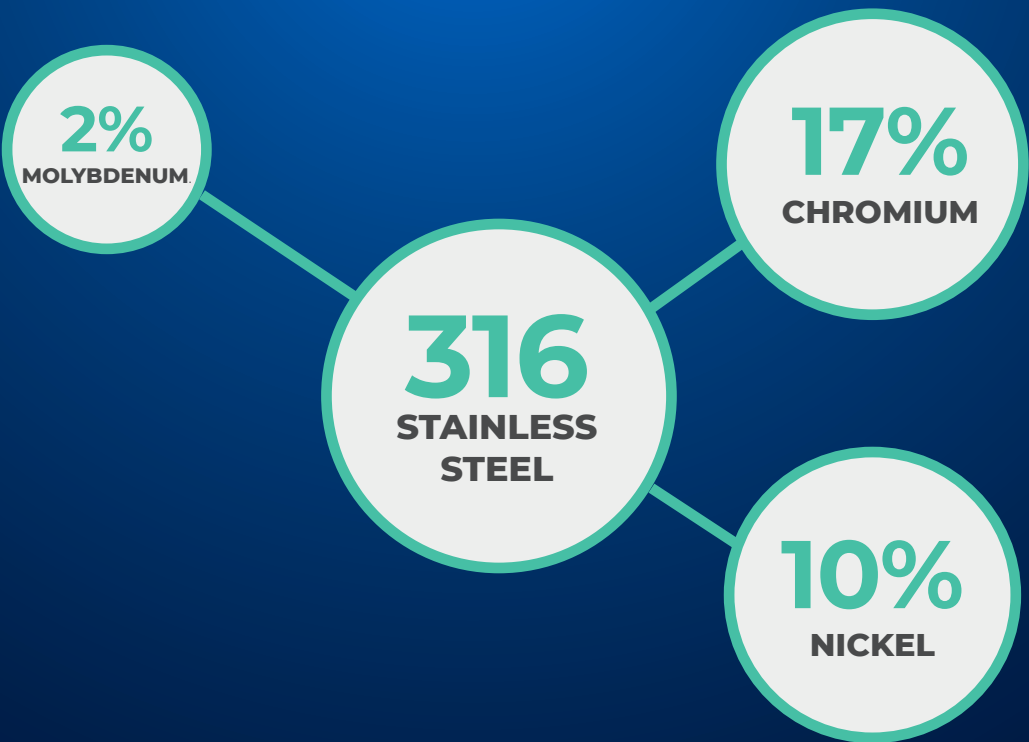
The ICDA has confirmed its engagement as co-financer to the existing project which was initially developed by the Nickel Institute and International Molybdenum Association and aiming at promoting the use of 316 type stainless steels for public water distribution.

STAINLESS STEEL IS OFFERING A NUMBER OF BENEFITS :

- Corrosion resistance
- Durable
- Hygienic
- Strong
- Lower Life Cycle Cost
- Not susceptible to cracking
- Lower maintenance costs
- Improved water quality
- 100% recyclable

CORRUGATED 316 STAINLESS STEEL PIPES HAVE THE ADVANTAGE TO BE FLEXIBLE AND THUS

- Reduce leakage by minimizing the number of joints
- Improved Workability
- Flexible and easy to install
- Resistant to seismic shocks and subsidence
- Matching fittings to connect to the water main and valves and meters



IT OFFERS EXCELLENT CORROSION RESISTANCE IN A WIDE RANGE OF SOILS.

Since 1994 Tokyo has reduced annual water leakage by nearly 37.5 billion gallons, with savings in excess of US \$ 200 million per year. Taipei's reduction since 2002 is about 38.6 billion gallons annually. More importantly, Taipei was able to provide continuous service in 2014 with water to spare, during a more severe drought than the one which instigated the project in 2002.

The corrosion resistance, durability, resilience and reduced number of joints of corrugated stainless steel service pipe has played an important role in stopping leaks.

The experience of Tokyo, Seoul and Taipei proves the suitability of stainless steel for service lines even for very large systems. While the initial cost compared to competing materials may be higher, stainless steel has been shown to be a good investment over its long life, paying back each year in reduced maintenance and cost per gallon processed.

By co-funding this project over the long term the ICDA is expecting the further development of stainless steel water distribution system around the world to save a most precious and vital resource.



Life Cycle Assessment for HC FeCr

At a time when most countries are drafting policies to monitor their emissions' level it is essential for the ICDA as an industry organization to offer its support by developing a program of emission measurement, quantify progress and promote the use of best available technique for a low-emission ferrochromium industry.

The ICDA has appointed Sphera to collect emission data from voluntary Members, the aggregated data will provide an overview of the industry performance over the last years and enable companies to have an up-to-date dataset which they can report to their respective country authorities.

Supporting the Leather Working Group Environmental and Social Certification

The ICDA is a member of the Leather Working Group, the organization which aims to improve the environmental and social impact of the leather industry by assessing and certifying leather manufacturers. Founding members include some of the most well known international brands from the fashion and design sectors.

About 80% of the leather produced today is tanned using chromium salts, rather than developing a program within the ICDA we have decided to join forces with a dedicated organization which is specialized in this key end-use for our product.

Today the Leather Working Group boasts over 1000 members from across the supply chain and offers multiple certification standards for different stakeholders in the leather manufacturing industry.



02

DEVELOPING MARKETS



Team Stainless renewal

Strength lies in unity, the ICDA, the International Stainless Steel Forum, The International Molybdenum Association and the Nickel Institute have renewed their commitment to work together for the development of the stainless steel market worldwidenew leadership in these organization has helped for a complete renewal of the Team Stainless strategy including corporate identity.

THE OBJECTIVES OF TEAM STAINLESS INCLUDE

- Foster profitable stainless steel market growth
- Educate users about the use of stainless steel
- Promote innovation and develop markets
- Communicate the many benefits and contributions to a sustainable society
- Raise the profile / image of the product and the industry
- Provide global facts for local use
- Encourage and promote production, use, re-use/recycling in a socially and environmentally responsible manner
- Speak with one voice
- Defend stainless steel and its constituent elements against unfair regulatory treatment
- Provide an informal platform for sharing and exchanging information

The Global Life Cycle of Stainless Steels

The study conducted in partnership with the prestigious University of Yale (USA) concluded that **ON AVERAGE 85% OF STAINLESS STEELS ARE RECYCLED ONCE THEY REACH THEIR END OF LIFE WHILST 100% OF STAINLESS STEEL ARE RECYCLABLE**, making it a material of choice for circular economy.

The study will be updated from 2021 and onwards in order to measure our progress in terms of recycling rate.

The Global Life Cycle of Stainless Steels

Minimising mining (primary production) and maximising recycling (secondary production) are core principles of sustainable resource management. Consequently, there is an increasing interest in quantifying the material life cycle of stainless steels and their efficiencies from production, to fabrication, manufacturing, use, recycling and, in some cases, disposal.

In 2006, Team Stainless and Yale University started the first project to quantify stainless steel stocks and flows cycles in 2000 and 2005. This fact sheet provides highlights from the latest study 'Comprehensive Multilevel Cycle of Stainless Steel in 2015' by B.K. Reck, covering 50 countries, territories and country groups.



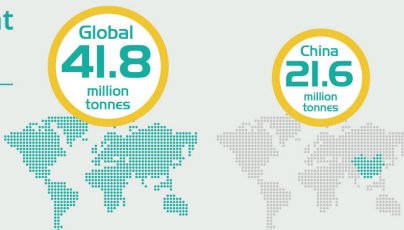
Stainless steels: a sustainable solution for more than a century

Stainless steels are produced in various grades and support many essential applications in our modern world from transportation, buildings, bridges, water pipes and industrial processes to medical uses, food processing and preparation. They are often selected as the sustainable material of choice for a myriad of domestic and industrial applications because of their recyclability, strength, toughness, durability, hygienic properties, and resistance to corrosion, heat, cold and blasts.

2015 global production & apparent consumption

In 2015, global stainless steel meltshop production was **41.8 million tonnes**, with more than half being produced in China (21.6 million tonnes).

Use in manufacturing was estimated to be **35 million tonnes**, **46% of which was in China**.

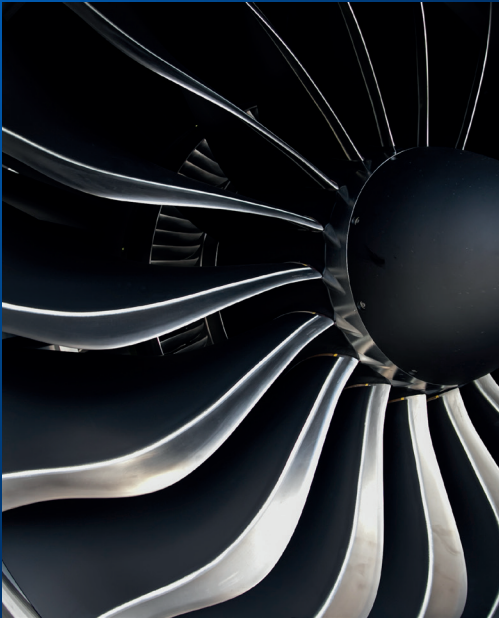



Special Steels

A minimum of 10,5% chromium is necessary to make stainless steel however chromium can be added to a wide range of other alloys, providing essential properties such as corrosion, wear and heat resistance, strength, durability.

Special steels are used in a large variety of applications from nickel chrome superalloys strategically used in oil and gas industries, jet engines, nuclear, electronic alloys to alloy tool steels and engineering steels.

The chromium content of these alloys can be comprised between 0,2% to 20%. In order to understand the structure of this key market for our industry the ICDA has commissioned SMR to produce a report providing a detailed strategic analysis on these segments, the report will be released to members in the first half of 2021.





HSE Committee Meeting

24th november 2020 - online

09:00 > 9:30 Introduction

- Welcome and participants presentation
- ICDA HSE activities overview
- HSE concerns from participating companies

09:30 > 11:00 EU Energy, climate & environment

- EU Green Deal and carbon neutrality for the European ferromanganese industry
- Raw materials – Strategy to be part of the Critical raw materials review
- Circular economy for the ferromanganese industry
- Implementation of the Best Available Technology

11:00 > 12:00 On-going and future activities

- Responsible Chromium Program – In the process of being implemented
- LCI update and solutions for a reduced carbon footprint
- Alloys group safety awards



WELCOME to VOELPKER

Joining the ICDA will provide access to up to date information on the chrome industry and regulatory developments, and to get exposure to a broader network of influencers in matters related to our business. Voelpkers is expecting the ICDA to represent the chemicals industry in a changing and complex environment, and to promote its products to ensure long term sustainability.

VOELPKER
New ICDA Affiliate Member

Voelpkers
Friedrichstraße 1
30393 Völkse
Germany
www.voelpkers.com

mike.sachow@voelpkers.com
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SPECIAL RELEASE

icda®
JANUARY 15, 2020

THE CRITICAL IMPORTANCE OF CHROMIUM FOR PLATING A WIDE RANGE OF STRATEGIC APPLICATIONS

no substitute applicable on an industrial scale even though alternative options for specific uses may exist. Whilst the European Commission has finally authorized five out of the six applied for essential uses of chromium trioxide

(EC 215-607-8; CAS 1333-82-0), we have interviewed some of the European surface treatment associations and their members as well as a company working on new technologies for surface treatment.

Weekly Market Update #392

from previous week

Commodity	Price	Change
USA HC FeCr	stable	**
EU 304 grade CR sheet (base + surcharge)	stable	-1.04%
China 304 grade CR coil	-1.04%	-2.64%

Global market outlook

China's renminbi extends 2020 rally on easing trade angst (FT)

China's currency has gained further momentum since the signing of a trade pact in Washington by US and Chinese officials, scheduled for Wednesday, that will help lock in the terms of a limited agreement reached last month.

Although details on further concessions by both sides are scarce, the signing will at least prevent further levies on Chinese imports from being introduced by the US, which will also halve tariffs on \$20bn of imports imposed in September.

The renewed strength for the renminbi on Monday was despite broad stability for the greenback, with the dollar index tracking the US currency against a basket of peers essentially flat on the day. The offshore renminbi, which is not bound by the Chinese central bank's trading band, was also back below the Rmb6.9 per dollar mark, having firmed 0.2% on Monday to 6.8947.

China's central bank has been setting its daily midpoint level around which the currency is allowed to fluctuate gradually




icda®

INTERNATIONAL CHROMIUM DEVELOPMENT ASSOCIATION

#QUARTER 2 - 2020

CHROME ORE & FERROCHROM PRODUCTION & TRADE ANALYSIS

HSE CHAIRMANSHIP

icda®
JANUARY 2021



Dr. Juha Ylimäen



Dirk Rademacher

We warmly thank Dr. Juha Ylimäen, General Manager Sustainability and Environment at Outokumpu, for his commitment as ICDA Health, Safety and Environment Committee Chairperson since 2015. After 7 years of valuable work and guidance Juha will step down and pursue new goals.

Dirk Rademacher will take over the role of Chairperson for ICDA HSE activities. Dirk is Dip.-Ing in Chemistry with chemical process engineering and environmental technology from the University of Aachen (Germany). He has extensive experience in the chromium industry since he held various positions within Outokumpu's Environmental and Safety Department. He is also a member of various boards including for slags, sustainability and Environment, and REACH Consortium.

"HSE is not a job for someone alone - everything can only be done in a team. We will do everything we can do to continue on the path you have chosen and to further expand the network of HSE colleagues worldwide so that at least certain basic requirements are implemented worldwide. Responsible Chromium is certainly the next step here." Dirk Rademacher

We wish all the best to Juha for his future projects and thank him again for his efforts in pushing the chromium industry to high sustainability standards. A warm welcome to Dirk taking this new role with immediate effect and all the best to him and the team for future successful activities.

SPECIAL RELEASE

icda®
DECEMBER 22, 2020

CANADA'S RING OF FIRE WHERE WE STAND AND WHAT'S UP AHEAD ON THE ROAD TO 2027!

For the past 10 years, our industry has heard intermittently about Canada's Ring of Fire deposits and about the chrome ore which lies beneath the remote plains of Northern Ontario. In the spring of 2018, at our Member's Meeting in Paris, we heard from KWC, one of the companies with a goal to mine the Ring of Fire, we heard from the Marten Falls First Nation, on whose land some of the deposits are, and we heard from Natural Resources Canada.

Canada, the department of Canada's federal government in charge of handling natural resources questions. In order to bring you the latest information on this topic and in order to paint the clearest picture possible of the road ahead for Canada's chromium industry, we've reached out to the federal government of Canada, via Natural Resources Canada, to the provincial government of Ontario, via their Ministry of Energy, Northern

Development and Mines and to Alan Coutts, CEO of Noront, who intends to produce chrome ore and ferrochrome by the end of the decade. They've kindly agreed to answer our questions and share their views of the perspectives for Canada with ICDA Members. Interview compiled by VICTOR CONSTANT ICDA Senior Market Analyst



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04

TRANSITION TO DIGITAL

Maintaining the networking is essential whilst borders are closed, digital is enabling to stay in touch and to access quality information presented by market experts.

We instantly offered online events to our industry as well as networking tools in addition to reinforcing our presence on social media.

We have presented at various webinars, organised a 4-day virtual conference and have increased our LinkedIn followers to more than 650, the platform being used to post regular news and industry announcements.



"Well organized. Good quality line-up. Web-app was/ is a great tool. Once understood it was easy to navigate in and use it. For a virtual conference ? Think it was close to perfect."

ELG HANIEL GmbH

"Online efficiency of virtual sessions against recent tough conditions due to Covid pandemic. Thanks for all ICDA Team for valuable efforts."

AFARAK

"It was good to learn so many changes which happened in the past 8 months in the filed of FeCr and Stainless steel sitting at the office."

AL TAMMAN INDSIL FERROCHROME

"Very insightful presentations and information/scenario settings."

GLENCORE

"Easily accessible and very informative."

RAND YORK

"I liked the platform that was used. Good communication and guidance before the event".

UNICHROME

"Excellent access to the platform and a complete content exposed by the speakers."

FERBASA

05

SUPPORTING THE INDUSTRY IN CHINA

Supporting the industry in China

Over the years the ICDA presence in China has grown following the development of the local chromium industry which is currently accounting for close to 50% of the global ferrochromium production. China, as the world economy driver, is providing great potential for the sustainable development of chromium markets.

THE ICDA ACTIONS FOR CHINA INCLUDE:

- Having a Representative in charge of taking care of the needs of the local industry and ensuring the service provided is relevant to the local challenges.
- Distribute market research reports and analysis (edited weekly, monthly and quarterly)
- Share best available practices and scientific knowledge within the field of health, safety and environment, organize workshops with technical experts whenever necessary
- Setting up partnership with local associations and contribute in market development projects
- Host events for the Chinese chromium industry including an international conference at least every two years, an annual Chinese New Year dinner and regular workshop on demand.

With 16% of its membership located in China, the ICDA has also given power to a local committee composed of the following companies:

- Mintal (Chairman)
- China National Minerals
- Ehui Metallurgy Group
- Hubei Zhenhua
- Xin Gang Lian



06

OUR MEMBERSHIP

Ordinary Members

- Acerinox S.A. (Spain)
- Afarak Group (Finland)
- Aktyubinsk CCP / Networld Trading Ltd. (Turkey)
- Al Tamman Indsil Ferro Chrome LLC (Oman)
- Albchrome (Albania)
- AMG Superalloys UK Limited (United Kingdom)
- Anglo American Platinum Limited (South Africa)
- Aperam S.A. (Luxemburg)
- Balasore Alloys Ltd. (India)
- Brother Enterprises Holding Co., Ltd. (China) - **Newly Joined**
- China National Minerals Co., Ltd. (China)
- Chongqing Changyuan Group Limited (China)
- Chongqing Minfeng Chemical Co., Ltd. (China)
- CRONIMET Group (Germany)
- DCX Chrome - Groupe Delachaux (France)
- Dedeman Madencilik Sanayi ve Ticaret AS (Turkey)
- Ehui Group Limited (China)
- Elementis Chromium (USA)
- ELG Haniel Trading GmbH (Germany)
- ERG Sales AG (Switzerland)
- Eti Elektrometalurji A.S. (Turkey)
- Ferbasa (Brazil)
- Glencore (South Africa)
- Hubei Zhenhua Chemical Co., Ltd. (China)
- Indian Metals & Ferro Alloys Ltd. (IMFA) (India)
- JFE Material Co., Ltd. (Japan)
- Jindal Stainless Limited (India)
- Masa Chrome (Pty) Ltd. (South Africa)
- Merafe Resources Limited (South Africa)
- Minerals Technologies (South Africa)
- Mintal Group Chrome Industry Science and Technology Co., Ltd. (China)
- Misrilall Mines Private Limited (India)
- Nippon Chemical Industrial Co., Ltd. (Japan)
- Nippon Steel Stainless Steel Corporation (NSSSC)
- Novotroitsk Plant of Chromium Compounds (Russia)
- Ore & Metal Company Ltd. (South Africa)
- Outokumpu Chrome Oy (Finland)
- RFA International LP / ChEMK (Switzerland)
- RusChrome GmbH (Germany)
- Sail Holding Pty Ltd (Singapore) - **Newly Joined**
- Samancor Chrome (South Africa)
- Sibanye Stillwater (South Africa)
- Soda Sanayii A.S. - Sisecam Group (Turkey)
- Stork Vienna (Austria)
- Swiss Steel Group (Germany)
- Tata Steel Limited (India)
- Tharisa Minerals (Pty) Ltd. (South Africa)
- Tsingshan Holding Group Company Ltd. (China)
- VISA Steel Limited (India)
- Vishnu Chemicals Limited (India)
- Xin Gang Lian Metallurgy Co., Ltd. (China)
- Yildirim Group / Eti Krom A.S. (Turkey)
- Zimasco (Pvt) Ltd. (Zimbabwe)

Associate Members

- Asia Steel & Metals Ltd. (Hong Kong, China)
- Baometal Minerals International Trade Limited (China)
- BF International Limited (Japan)
- CellMark Metals / Sonaco Trading AB (Sweden)
- COFERMIN Chrome GmbH & Co. KG (Germany)
- Cometal SA (Spain)
- EK-Company (EKC.AG) (Germany)
- F.W. Hempel Intermétaux S.A. (Switzerland)
- Galmet SPA (Italy) - [Newly Joined](#)
- Gunvor Singapore Pte Ltd. (Singapore)
- HANWA Co.,Ltd. (Japan)
- Inter Alloys, S.L. (Spain)
- Jackson Minerals Co., Ltd (China)
- Marubeni Tetsugen Co., Ltd. (Japan)
- Metal Partner GmbH (Germany)
- Mitsubishi Corporation (Japan)
- Mitsui & Co. Ltd. (Japan)
- New Sokao (Belgium)
- Noble Resources Int. pte. Ltd. (Singapore)
- North American Minerals Chrome Sales Ltd. (USA)
- Pacific Linkage Limited (China)
- Pelagic Resources (Pty) Ltd. (South Africa)
- Plomp Minerals Services (the Netherlands) - [Newly Joined](#)
- Possehl Erzkontor GmbH Co KG. (Germany)
- Prince (USA)
- PURMETALL GmbH & Co. KG (Germany)
- Qunxian International Trade Co., Ltd. (China)
- Rand York Minerals (Pty) Ltd. (South Africa)
- "RMK" Ltd. (Russia)
- Sojitz Corporation (South Africa)
- Southern Development Ltd. (SODEVCO) (UAE /USA)
- Sumitomo Corporation (Japan)
- TELF AG (Switzerland)
- The Department of Mineral Resources (South Africa)
- Tianjin Maxore International Trade Co. Ltd. (China)
- Traxys North America LLC (USA)
- UniChrome AG (Switzerland)
- Vopelius Chemie AG (Germany)

Affiliate Members

- Canada Natural Resources Ministry (Canada)
- CMMP (France)
- Cromochemica Industriale SRL (Italy)
- Exxaro FerroAlloys (Pty) Ltd. (South Africa) - [Newly Joined](#)
- F.W. Winter Inc. & Co. (USA)
- LBH Mozambique (Mozambique)
- Magotteaux International S.A (Belgium)
- Metal Line Projects (South Africa)
- Metso Outotec Oyj (Finland)
- Monteagle Logistics Limited (South Africa)
- Savroc Oy (Finland)
- SIBELCO (France)
- SNCZ (France)
- Tenova Mining & Minerals (Pty) Ltd. (South Africa)





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