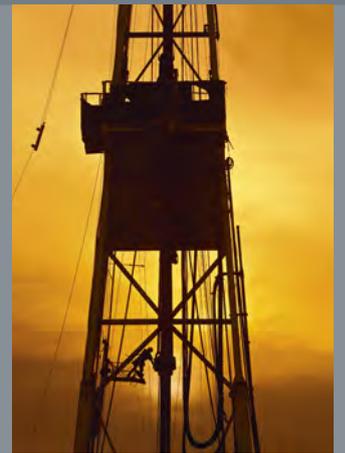
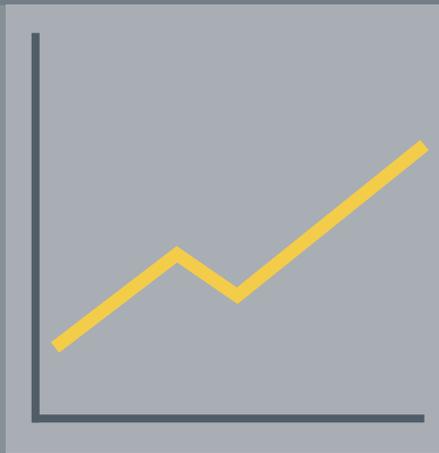


International Molybdenum Association –
the voice of the molybdenum industry

IMOA membership prospectus





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The International Molybdenum Association (IMO A) was founded in 1989 as a non-profit trade association, and is registered in Belgium. We currently represent around 85% of mine production and almost all conversion capacity outside China as well as significant production within China.

There are many benefits to be derived from being a member of IMO A.

Our dynamic market development program promotes the use of molybdenum in products and applications by providing technical information, dedicated workshops for fabricators, engineers and designers, numerous technical brochures, case studies and a comprehensive website.

As well as engaging industry and disseminating information, we sponsor research to discover and develop new or expanded uses and applications for molybdenum.

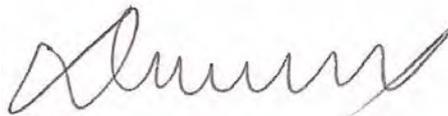
Our committed Health, Safety and Environment (HSE) team monitors the international legislative horizon for forthcoming challenges and coordinates industry-wide responses. The team works with internationally-renowned expert consultants and laboratories to generate rigorous, independent scientific evidence in support of appropriate regulation.

The IMO A Annual General Meeting marks one of the largest gatherings of the global industry and offers members an unparalleled networking opportunity as well as keynote addresses on industry trends from world-leading experts.

Joining IMO A also makes good financial sense. Membership of a non-profit trade association is an effective way to share in valuable programs, which help to develop markets and ensure against over-cautionary regulation at a fraction of the cost of acting individually. Everything we do is in the best interests of our membership.

I hope that this prospectus is useful and answers any questions you might have about the benefits of membership. Please contact me personally if you would like to discuss any aspect of our work in more detail.

I hope to welcome you as a member in the near future.



Tim Outteridge
Secretary-General

Membership benefits at a glance



Market Development

We work to raise awareness of the unique properties and performance of molybdenum and how they contribute to sustainable development.



Research funding

We sponsor research to evaluate the effects of molybdenum in applications where it is not used or where its use could be expanded.



Regulatory liaison

We use rigorous scientific evidence to support appropriate regulation and coordinate industry-wide responses to developing legislation.



Market statistics

We produce and publish quarterly statistics and trends on the global production and use of molybdenum.



Technical support

We provide respected, independent technical advice to users of molybdenum and molybdenum containing products.



Networking

Our Annual General Meeting creates a valuable opportunity for customers and suppliers to meet within a geographically diverse industry.

Health, Safety and Environment





ARCHE
ASSESSING RISKS OF CHEMICALS

CLASSIFICATION METHODOLOGY FOR METAL CONCENTRATES



IMOA
INTERNATIONAL MINERAL ORES ASSOCIATION



COPPER
INTERNATIONAL COPPER ASSOCIATION

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Introduction

The application of the EU CLP-regulation on single substances, or mixtures of pre-defined amounts of single substances, has proven to be relatively straight-forward. This is, however, not necessarily the case for complex compositions of naturally occurring substances. Metal ores and concentrates predominantly contain the mineral of commercial interest, but may also hold small quantities of metal-containing minerals that could trigger classification.

Applying a methodology that accurately takes into account the presence of these classified substances is a challenge as these substances are predominantly incorporated into a mineral structure with limited bioavailability. Because of this very important bioavailability aspect, any classification based simply on the elemental composition of an ore and concentrate may generate a significantly over-stringent classification. This paper elaborates on the impact of different methodological strategies on the final outcome of a classification exercise, using molybdenum concentrates as an example.

Material and Method

The metals industry has proposed to assess the classification of ores and concentrates by means of an assumed methodology that is based on the typical mineralogical composition of the concentrate, rather than just the elemental composition. This mineralogical approach has the crucial added value that Transformation/Dissolution (T/D) testing can demonstrate whether identified classified minerals are present in a bio-available form or not. This methodology is not yet formally included in the current classification legislation, but familiarity and acceptance among regulators is already growing; a methodology using mineralogy results in a more realistic classification than one based simply on the elemental composition of a concentrate.

Results & Discussions

Classification of a hypothetical Molybdenum concentrate: **5th component: Molybdenite (MoS₂) up to 98%**

<p>Elemental-based classification</p> <p>Classification of the concentrate is determined by applying the mixture rules on the elemental composition, assuming the concentrate is fully bioavailable and that bioavailability is the total metal.</p>	<p>Minor constituents:</p> <ul style="list-style-type: none"> Galena (Pb) Chalcopyrite (CuFeS₂) Tennantite/Bismite (Cu₁₂As₄S₁₃/Cu₁₂As₂S₁₃) Realgar/Orpiment (As₂S₃/As₂S₅)
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IMO A has a proactive approach to identifying, monitoring and responding to global regulatory issues with the potential to affect our membership, focusing on proposed legislation, data-gathering and scientific studies.

We make submissions on behalf of the industry to support or challenge developing legislation.

- **We work with internationally-recognized experts to generate world-class scientific research and evidence.**
- **Our work ranges across classification issues and workplace exposure limits to environmental standards and more.**
- **Our research data is used in human health assessments and in the setting of environmental quality standards.**
- **IMO A is earning a reputation for scientific diligence and rigor in the regulatory community.**





IMOA regularly engages in dialogue aimed at ensuring proportionate regulation. Most recently, we have successfully used scientific evidence to argue against overly restrictive water quality standards in USA, Germany, the Netherlands and at EU level.





IMOA has developed an extensive environmental effects dataset, most of which is available to members conducting environmental impact assessments or interacting with regulators. We are already using this in our own discussions with regulators to support appropriate regulation.



IMOA established and manages the Molybdenum Consortium that undertook the comprehensive hazard identification and risk assessment of molybdenum and its compounds, culminating in twelve substances registered in accordance with the EU REACH Regulation.



IMOA is active in the Globally Harmonized System (GHS) hazard identification and risk assessments for molybdenum ores and concentrates. We also provide Safety Data Sheet templates for our members to customize for their individual concentrates.

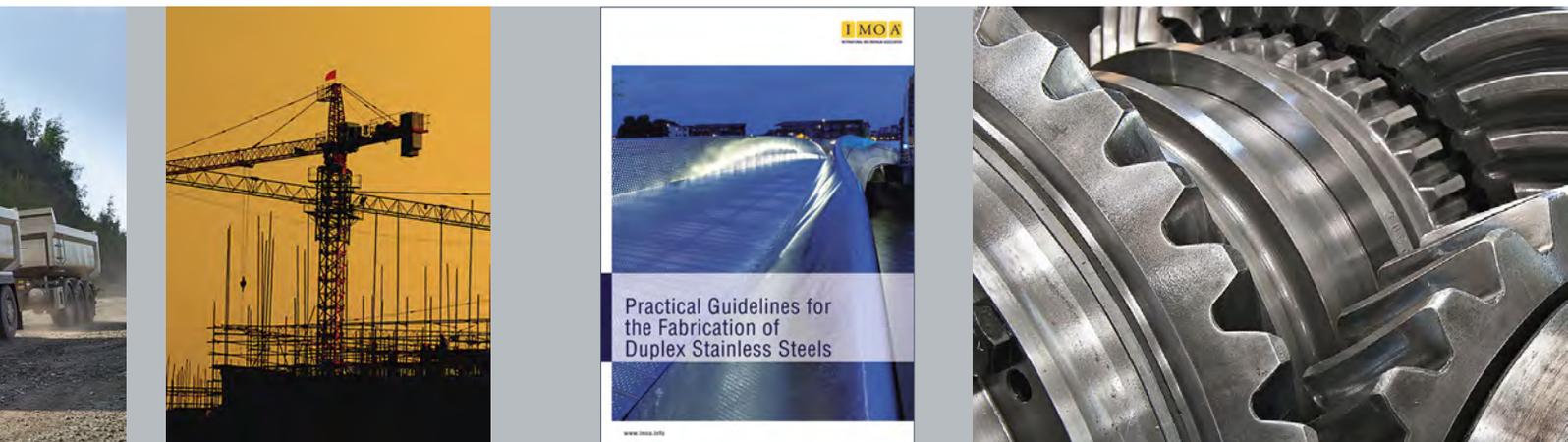
Market Development



IMO A's market development program aims to support and increase the use of molybdenum in new and existing products and applications by raising awareness of its unique properties and benefits.

Our programs and campaigns help to grow demand for molybdenum-containing products in a variety of sectors, such as architecture, building and construction, water and transportation.

- **We conduct a program of technical meetings, presentations and symposia and host workshops with fabricators, engineers and architects.**
- **IMO A sponsors research to discover and develop new or expanded uses and applications for molybdenum, and to add to our broad knowledge about its properties.**
- **Based on this knowledge, we provide respected, independent advice and develop training materials for alloy selection, fabrication and use.**
- **We publish comprehensive literature and maintain an extensive website providing technical information about molybdenum, its properties and applications.**





A joint research program in China demonstrated the minimum molybdenum content necessary to give sufficient resistance against atmospheric corrosion in ferritic stainless steels, which will help to promote use in architectural applications.



A research project with a pipeline manufacturer proved that adding molybdenum to the alloy facilitates production and improves toughness and strength at low temperatures, making the product suitable for arctic use.





We actively engage with the architecture and engineering sectors, holding workshops and drafting articles for sector media to raise awareness and build interest in stainless steel and other molybdenum-containing materials.



IMOA-hosted symposia on molybdenum alloying in high performance steels bring together delegates from research institutes and steel companies to discuss the latest research and results presented by some of the world's leading metallurgists.



Sustainability



MoRE FOR LESS

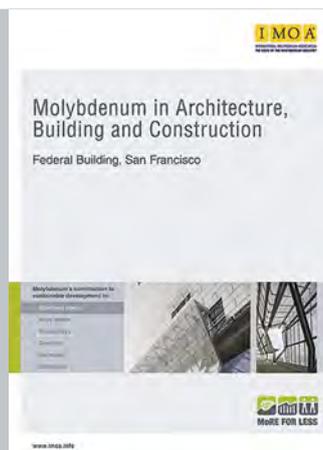


Sustainability considerations are an increasingly important part of corporate agendas. The unique properties of molybdenum are integral to many sustainable applications.

IMO's 'MoRE FOR LESS' activities highlight the often significant contribution that a small amount of molybdenum in a product or application can make to sustainable development.

- **A dedicated area of the IMO website has been created to explain molybdenum's contribution to sustainable development in general and in specific examples.**
- **A range of case studies aims to demonstrate molybdenum's unique contribution to sustainability in more detail across a variety of sectors and applications.**
- **Attendance and keynote presentations at relevant conferences seek to further raise awareness of molybdenum's sustainability credentials.**

The MoRE FOR LESS activity will continue to explore and highlight other sustainable uses and applications where molybdenum makes a contribution.



Communications



A focused communications program provides support to the Market Development and HSE teams to ensure messages about molybdenum and the activity of IMO A are disseminated to a wide range of stakeholders in a timely and effective manner.

Periodic strategic communication reviews ensure that all appropriate channels for industry and IMO A messages are fully utilized.

- **A proactive media program seeks to generate further publicity around IMO A activity, maximizing impact with targeted industry media.**
- **IMO A's website is regularly refreshed with topical information and new content to engage, update and support users.**
- **MolyReview, published twice yearly, showcases interesting and amazing uses for molybdenum as well as more everyday applications where its role is less well known.**
- **Our Annual Review highlights IMO A's work and achievements over the previous year.**
- **E-bulletins keep members and website account holders updated with the latest news from IMO A.**





For details of membership subscriptions and the application process, please visit the website at www.imoa.info and click on 'Join IMOA'.



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