

COMPANY NEWS

ASL Special Powder Production Facility

A number of ASL's existing plant customers have over the past few years requested ASL to produce special powders on our R+D/Production facility. This facility has grown over the years and production is now a significant part of the operation. Of course we cannot produce every type of powder for which we have supplied systems, as we just do not have a large enough facility, or the capital resources, to build and house the multitude of speciality atomisers that we have supplied. We can, however, produce many types of powders from solders through dental alloys to brazing alloys and other specials. What they have in common is demanding specifications for various critical parameters such as low

oxygen content, good flow properties, size control, or very low (ppm levels) of cross-contamination.

Some customers go on to order their own equipment when the powder volumes get large enough after ASL has helped them take the powder from a small test lot to the larger scale of full production. Others are more than happy to continue to let ASL produce the powders for them with consistent high quality from lot to lot.

If you have a new powder requirement please contact us

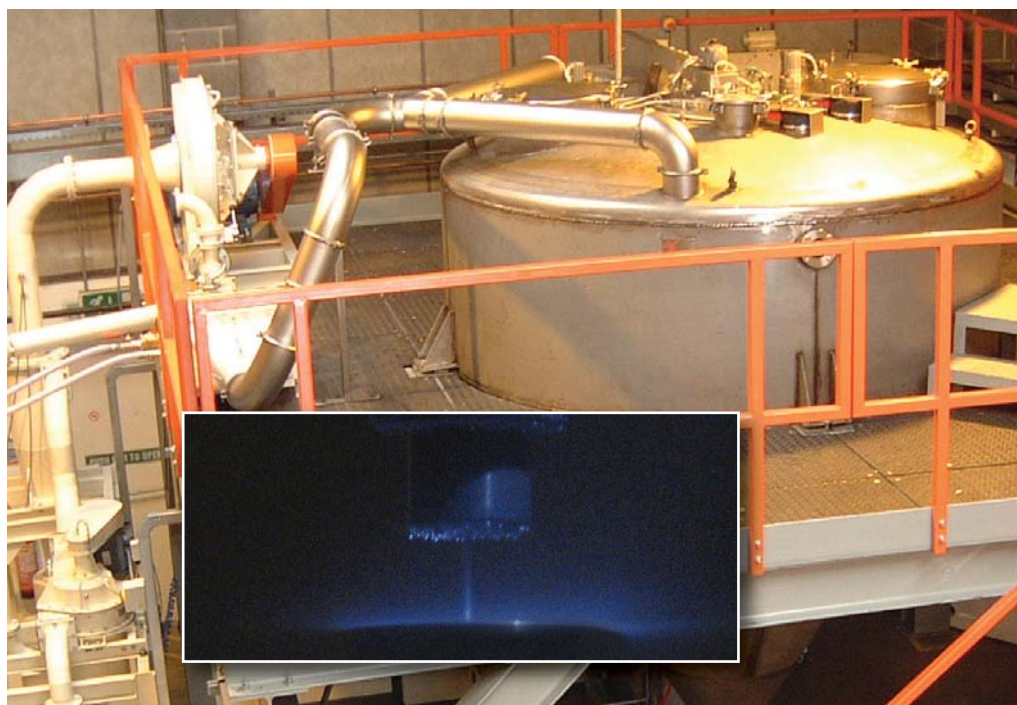
COMPANY NEWS

Centrifugal Atomiser Delivered

ASL's latest high technology design of centrifugal atomiser has been delivered to a client in China. The system, which is capable of disk speeds of 60,000rpm, has an increased throughput and incorporates an on-line classification system, allowing the client to deal with the product very easily. The only operations on the powder after discharge from the unit are sieving to meet the upper particle size requirements and packing. The system is capable of producing over 2.5 tonnes per day of type III solder powder or 2.2 tonnes of type IV powder.

"Our clients are demanding ever-increasing efficiencies and throughputs and our latest centrifugal atomiser with the integrated classification system has more than met their requirements. Of course that will not halt our constant push for increased performance and efficiency" said Paul Rose ASL's Technical Sales Manager.

The new system was started up in November 2007 and is now in full production in the client's dedicated facility.



System under test in ASL's Sheffield works

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World First "Anti-Satellite" Gas Atomiser Delivered

Atomising Systems Ltd (ASL) of Sheffield, England are pleased to report that their client Castolin Eutectic Ireland Ltd (CEIL) are in full production using their new gas atomising facility supplied by ASL. CEIL are part of the world-wide operations of Castolin Eutectic, a division of the Messer group of companies based in Frankfurt, Germany, and a leading supplier of wear and fusion technology solutions. As such, they supply a very wide range of special alloy powders based on Ni, Co and Fe to be used in various welding, thermal spray and brazing processes. Their major consumable production facility in Tallaght, near Dublin, moved to a new greenfield site during 2006/7, with the goal of establishing a state-of-the-art powder production facility with the latest technology from ASL.

The new system is fitted with two powerful 350kW, 250kg melters and is 8m tall. It is the first system supplied by ASL to incorporate their recently developed "anti-satellite" technology. Metal powders made by inert gas atomisation are commonly supposed to be spherical in shape, but in fact suffer from a major problem, known as "satelliting", where most particles have much smaller ones stuck to their surfaces. This problem gets worse as powders are made finer. The result is poor flow properties and a lower than expected packing density. One way to avoid satelliting is to quench the gas atomised spray in water which produces excellent sphericity powders but excessive oxygen levels for certain special applications or alloys. Standard dry gas atomisers have reduced oxygen contents, but

degrade the desirable spherical shape and excellent flow properties, which come with the water quenched powders.

In addition to designing and supplying the atomiser, ASL supervised its commissioning and undertook training of the new crews hired to operate the system. A two-day course was run combining lectures (based on ASL's successful post-graduate level PERDAC course on atomisation of metals) with hands-on work on the production systems at ASL's Sheffield facility where 8-10 melts of copper alloy are atomised per shift.

The running-in of the atomiser, fitted with an induction-heated tundish to allow long pouring times, was protracted, given the huge

range of over 50 different alloys, many supplied to several different specifications for different welding processes, which all had to be carefully tested before shipments could commence. Some alloys are on the limit of melting technology, with melting ranges as wide as 400°C or more, which make severe demands on both operators and equipment.

John Dalton, Managing Director of CEIL, says "Our demanding requirements for powder quality have put ASL under pressure, but we have worked well with them and are very pleased with their performance and with our new plant. We will continue to work with ASL to improve our quality and productivity"



Latest Ultrasonic Atomiser Ordered

Double throughput System also Available

ASL's latest generation ultrasonic atomiser has recently been delivered to a customer in China. A delegation was sent to ASL to receive the first stage of training on the equipment. The second stage of training will be completed at the client's site after installation and commissioning. The fully automated system, which is skid mounted, is equipped with two melting furnaces and designed for both R+D batches and long production campaigns.

Pete Taylor, Manager, Engineering and Contracts, said "This latest high efficiency ultrasonic atomiser has been designed for easy installation. The customer will be quickly into operation with minimal installation work"

ASL now offers a double output system giving approx. 50kg/hour of TypeIII solder powder. This helps bridge the gap between the normal ultrasonic and the large output centrifugal system which can produce 120kg/hr of TypeIII solder.

R&D Contracts

ASL has always been known for the importance that it places on R+D. This commitment has not gone unnoticed by a number of our clients who have requested that we undertake R+D contracts for them. The nature of the contracts although extremely interesting must remain confidential. However, it is clear from current trends that many companies have reduced R+D staff and facilities and are making use of ASL's specialist knowledge and facilities. If you are interested in a new powder or a special application, please contact us here at ASL.

Web Site Upgraded



ASL has recently upgraded the design of the website www.atomising.co.uk. We've aimed to make it a little easier to navigate and a little less cluttered. In addition to this we have actually added a few new features.

One is a PDF library of the old newsletters and the other a technical article listing. The technical articles will be available free of charge, all we ask is that you e-mail us with your contact details and we will send you the requested article by return e-mail.

TECHNOLOGY

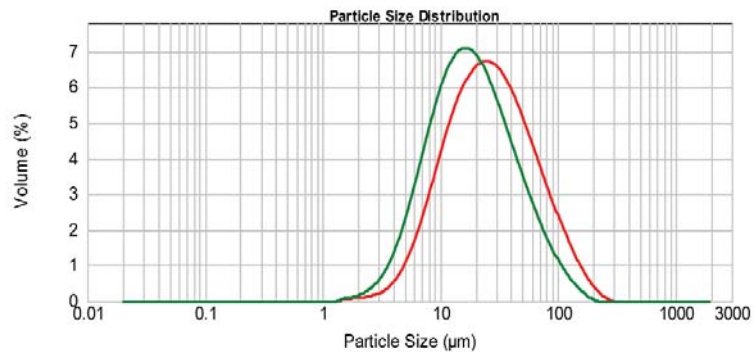
ASL Reduces Carbon Footprint with Hot Gas Technology

ASL has developed a substantial business in producing gas atomised powders and is concerned to reduce its production costs and the amount of carbon dioxide emitted due to its activities. When atomising with nitrogen gas, ASL use a total loss system, where the gas is supplied as liquid nitrogen and evaporated to provide the necessary high pressure, high flow of gas needed. To produce one cubic metre of nitrogen requires the expenditure of ~0.7kWhr of electrical power in the air separation process. It is estimated that the average carbon dioxide emitted in producing one kWhr is 0.6kgs. Thus when the atomiser is using 25n.cu.m/min of nitrogen it is effectively using over one megawatt electrical power and emitting 10.5kg/min of CO₂. Given that the particular powder we are making in bulk required ~2.5n.cu.m. of nitrogen per kilogram, we estimate that producing one tonne of powder emitted 1.05t of CO₂ due to nitrogen consumption, while the melting of it (normally considered the biggest energy cost) only accounts for 240kgs of CO₂, based on using 400kWhr/t.

To reduce this significant carbon footprint, which at a production rate of 400t/yr might reach 516t/yr of CO₂, ASL has decided to invest in a gas heater and a number of other necessary system modifications to allow atomisation with hot gas. As detailed in a paper to be presented at PM2008 in Washington gas heating has been found to reduce the weight of gas needed to atomise a metal and the 100kW heater has already reduced consumption by 30-40%. After further development work on our system, we

estimate this could be raised to over 50%, thus reducing the power used to make the gas at the rate we consume it by more than 500kW. On the same basis of calculation as above, this should reduce the carbon emitted in melting and atomising this powder by 38% or almost 200t/yr.

In addition to allowing reductions in gas consumption, it is also possible to produce much finer powder, and ASL will be carrying out tests on this in the coming year.



Early tests showing a significant shift in D50 with minimal gas temperature increase

ASL Growth

ASL's turnover has been growing rapidly in the last 2 years and we have had to increase our staff from 14 to 19. Pete Taylor brings his vast experience of process plant design from his previous roles in specialist engineering companies to ASL as Engineering Manager. Joining Pete in the Engineering Department as a Junior Draftsman is Luke Richardson. Luke previously worked as a fabricator, and brings a solid understanding of the specialist fabrication work that ASL requires. Paul Frost joins us as a senior operator on powder processing, whilst Kyle Arnold has joined ASL as an apprentice and Steve Hemingway as a technician.



L-R Kyle Arnold, Pete Taylor, Steve Hemingway, Luke Richardson and Paul Frost

PM2008 Germany



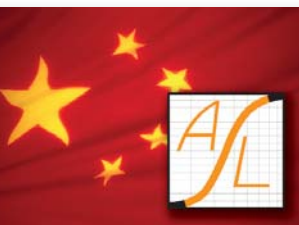
The Euro PM2008 Congress and Exhibition moves to Mannheim, Germany, for 2008. Hosted by the EPMA, the venue will be the Mannheim Congress Centre running over 29th September –1st of October 2008

ASL hope to see you there as we will again be taking a booth.

Further information on this event may be found from:

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www.epma.com

COMPANY NEWS



ASL's Chinese Office

ASL has been working in China for many years. The office is run by Dimi our representative. Dimi, who is fluent in Chinese, can be contacted at:

dimi@atomising.com
Tel: 0086 13501178527
www.atomising.com

Atomisation Course October 2008



The course by Professor Andrew Yule of Salford University and John Dunkley of ASL entitled "Atomization for Metal Powders" will run again on the 20th and 21st October 2008. The series of lectures goes from the fundamentals of atomisation through specific techniques to plant design issues and the optimal operation and economics of atomising plants. Aimed at both industrial engineers/managers and research/technical staff, the course has been attended by companies from dental amalgam to dense

media and from iron powder to superalloys, zinc, gold and aluminium. Previous courses have typically had around 10 attendees from several continents and there is ample opportunity for discussion in confidence as, due to the huge range of industries using atomisation, it is rare to find competitors attending.

For full details see: either the ASL website www.atomising.co.uk or www.perdac.com

PAST EVENTS

Hagen Symposium 2007

In early December the DGM (Deutsche Gesellschaft für Metallkunde) hosted its 26th Hager Symposium meeting at Hagen, Germany. Paul Rose and Dirk Aderhold represented ASL. There were a large number of stands indicating the increased popularity of this German language only conference and exhibition. The conference consisted of the usual select high quality presentations.

The Hager Symposium attracts a high level of attendance due to these select papers and its professional organisation.

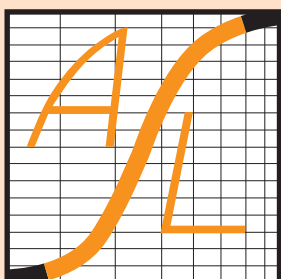
The 2008 conference, the 27th annual Hager Symposium, will be on the 27th – 28th November. Further details from Frau Schlieper tel 0049 (0)2331 958817 e-mail: mschlieper@fpm.wsm-net.de

COMPANY NEWS

ASL Founder Honoured



John Dunkley, the founder and Chairman of ASL, was honoured last year by his election as a Fellow of the Royal Academy of Engineering (FREng). This is the equivalent for engineers of the famous FRS (Fellow of the Royal Society) for scientists, and is awarded only to a small number of the most eminent engineers in the country each year. "I was surprised and delighted to be accepted into such a distinguished fellowship at the first application," said John. "It is very good to have the leading status of ASL in our very special technical field recognised in this way."



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