Your Total Choice for Foundry

www.ha-international.com
HA International, a joint venture company of Borden Chemical, Inc., and Delta-HA, serves the North American foundry industry as the largest supplier of products for core/mold production. Our parent organizations are highly integrated in the global chemical industry: Hexion, is the largest producer of Formaldehyde and Phenolic resins in North America, and Hüttenes Albertus supplies the global foundry industry through a network of subsidiary and affiliated companies.

HA International offers the North American foundry industry the most comprehensive range of products supported in three market segments: Resins Systems for bonding sand; Resin Coated Sand for the shell process; and Refractory Coatings.

**Leadership**

HA International’s business is lead by extensive talent and leadership. With an average of over 20 years of foundry and multi-business experience per leader, the Executive Leadership Team knows how to solve the market challenges and deliver results.
Operational Excellence

Operational excellence defines HA International’s performance standard. It represents our commitment to continuously improving everything we do. HA International, the leading industry producer of foundry resins, resin coated sands and refractory coating and has earned this market position and reputation through a long-term commitment to operational excellence.

HA International has met rigorous quality standards required for ISO 9001:2008 certification at all of our manufacturing facilities.

6 sigma

HA International innovation and improvement relies on Six Sigma as a key process. Six Sigma is a disciplined, data-driven approach and methodology for eliminating defects in any process – from manufacturing to transactional and from product to service. It provides various tools for our associates to look at key processes within the business from the customer’s perspective.

Sales & Technical Support

HA International employees strive to provide industry leading knowledge and service to our customers. A dedicated and experienced staff, our sales and technical service group is able to identify the right products to optimize your operation. In addition, they are able to conduct audits, run trials, and provide complete recommendations to have foundries experience the best results.
EcoMission

Our EcoMission
HA International supports sustainability by minimizing the foundry environmental impact of our products while continually improving their performance and value.

To be recognized as an EcoMission classification, each of our products must meet at least three out of five environmental criteria. These criteria are:

- Utilizes water or renewable components
- Utilizes recycled components
- Low Volatile Organic Compound (VOC)
- Low Hazardous Air Pollutant (HAP)
- Low Odor

HA International's Amine Reclamation Program (HARP) is HAI's newest EcoMission program designed as an ecologically responsible option for the disposal of scrubber solution created during Phenolic Urethane Cold Box (PUCB) processing. Our HARP program delivers sustainability through recycling amines as well as providing performance and value to our customers.
HA International provides a complete range of organic or inorganic resin systems for all metal types, processes, and environmental considerations to meet all your foundry needs.

**SigmaCure**

Foundries interested in productivity, using Phenolic Urethane Cold Box resins, appreciate the diversity of performance capabilities offered within the Sigma Cure product line. HAI’s Phenolic Urethane Cold Box resins are the best in the business when it comes to high core strengths, long mixed sand bench life, humidity resistance, and release characteristics that can’t be matched. If you haven’t tested one of the Sigma Cure products, you haven’t unlocked the productivity potential of your Cold Box operation. The PUCB process utilizes an amine gas to catalyze the reaction between a phenolic resin and an isocyanate resin to produce a urethane bond. HAI’s amine catalyst product line, Sigma Cat, is designed for use with our entire line of phenolic urethane cold box resins.

**Biocure**

Technology developed in Europe has been applied to the North American market to produce a variety of “Low VOC” Phenolic Urethane Cold Box products for reduced core making and casting/shakeout emissions. The “Biocure Series” may help you satisfy the permitting and emission requirements of the local regulatory agencies.

**BETASET**

The same breakthrough chemistry which produced the ALpHASET system was subsequently used to produce the BETASET Cold Box system. The BETASET system uses a vaporized methyl formate gas to achieve a fast Cold Box cure and can be applied to a highly automated environment, such as automotive component production.
HAI’s Phenolic Urethane No Bake systems offer the same performance chemistry featured in the Cold Box resins but modified for No Bake applications. HAI's leading No Bake product line, Techniset is a commonly used No Bake system in the industry based on its value and recognized performance. HAI's Techniset offers a diverse product line, including low VOC systems using proven Biodiesel technology. In addition to general purpose resins we offer specialty systems for aluminum and non-ferrous applications.

**Shell Resins**

HAI produces the most complete line of liquid and solid phenolic shell resins in the foundry industry. The same quality of resin used at our Oregon plant is available to foundries which conduct their own sand coating operations.

**ALpHASET**

The first name in phenolic ester cured No Bake systems, HAI continues to improve this patented chemistry to achieve optimum productivity and casting quality. ALpHASET’s unique water soluble phenolic chemistry is capable of producing the highest level of casting quality, and minimizes the potential for casting defects experienced with other No Bake systems. The ALpHASET No Bake system is applicable to all types of metals being cast and excels in the production of large steel and alloy steel castings where other No Bake systems have shortcomings.

**BIOSET**

HAI's newest urethane No Bake system, Bioset, offers the same performance characteristics of our leading Techniset product line. This environmentally advantageous binder system is modified to contain very low free formaldehyde content and is coupled with a specially designed solvent package for lower odor and smoke during pouring, cooling and shakeout. Bioset Part 1 and Part 2 resins are environmentally friendly, high performance binder systems with patented chemistry to provide the highest hot strength available for these types of binder systems.

**Furan No Bake (FNB) and Phenolic No Bake (PNB) Acid Cure Systems**

HA International has the industry’s most comprehensive lineup of Acid Cure No Bake resin systems. Envirosset, Super Set, and Airkure resins provide a diverse selection of products for various metal and casting types.
HA International customizes each and every resin coated sand formulation so you can optimize your operation's unique capabilities. Our Custom Coat product line features:

- Faster build-up of sand helping reduce investment times.
- Good cure through and uniformity of cure.
- Excellent sand flowability with high resistance to peel back.

Custom Coat is designed for today’s demanding foundry applications. This sand has been designed to provide high levels of productivity by using the latest technology available to the foundry industry. Our Custom Coat products are produced and manufactured to your product's exact specifications:

- Resin content: 1-5%
- Hexa content: 10%+ (BOR)

### Packaging

Custom Coat E-Series offers the ability to customize to achieve optimal performance. All this while meeting all five of our EcoMission criteria. It is an environmentally compliant line of formulas that reduces ammonia and formaldehyde emissions by 30% and 60% from conventional formulas. Our Custom Coat E-Series formula incorporates all odor reducing methods:

- Resin content: 1-5%
- Hexa content: 5% maximum (BOR)

Liquid resin curing agent included

Low Odor

Available in:
- Super Sacks
- Boxes
- 50lb bags
- Bulk
- Palletainers
A good refractory coating can bring significant value to your operation through improved surface finish or reduced cleaning costs. Refractory coatings are a complex mixture of ingredients in which each plays a part in the final product's application characteristics, stability, surface finish, resistance to cast defects, and cost. Be sure to contact your HAI sales representative to determine which coating best fits your foundry's needs.

In 2007, HA International introduced a premier refractory coating product line, the Techni Kote 6000 Series. It provides better coating efficiency and improves the quality of castings. A reduction in overall operational expenses is achieved with lower scrap rates, increased coating mileage, elimination of sand additives, and reduced cleaning room costs.

Mold Lite Plus is an HAI's newest alcohol based refractory coating product line designed for large scale iron and steel castings. Designed for use with all No Bake resin systems, the Mold Lite Plus product line incorporates newer, more cost effective refractories in its formulations.

Dura Kote is an HAI's newest water based refractory coating product line designed for large scale iron and steel castings. Designed for use with all No Bake resin systems, the Dura Kote product line incorporates newer, more cost effective refractories in its formulations.
Today, Wedron Flux continues to provide a complete range of products and equipment that are environmentally friendly and can be tailored to the customer’s individual production needs.

For more information, visit www.ha-international.com to download our Product Brochure of manual and injection grade fluxes, equipment, graphite shafts and rotors available from HA International for the aluminum casting industry.
HAI offers a complete line of Companion and Auxiliary products for the foundry process. Our Companion product line is a perfect match for your Resin and Resin Coated Sand products while our Auxiliary product line rounds out the rest of your foundry needs.

**Companion Products**
HA International offers a comprehensive line of Companion products to complement the foundry process. Key product line offerings in this area include metal cleaners, release agents and shell hesives; all a perfect match for our Resin and Resin Coated Sand products.

**Auxiliary Products**
HA International offers a extensive line of Auxiliary products to complete all of your foundry needs. Key product line offerings in this area include core pastes, green sand partings, powder core pastes, mudding compounds, solvents, sand gaskets and files.
Your Partner
Into the Future

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