

SPACE CHEMICALS SPECIALTIES EXPERT SOLUTIONS FOR ALL YOUR NEEDS

PRODUCTS, EQUIPMENT AND SERVICES



FROM MOLECULES TO ROCKET PROPULSION...

ArianeGroup's experience and expertise in the production of fundamental energetic materials components dates back over 150 years.

The Group develops, produces, and sells specialized materials for solid and liquid rocket propellants, as well as for the automobile safety sector and the fine chemicals industry. ArianeGroup, a world-leading manufacturer of ammonium perchlorate, produces the combustion agent used in civil and military launch vehicles; a highly powerful oxidizer, ammonium perchlorate is the main component of the solid propellant which powers the Ariane 5 boosters.

The Group is also Europe's only supplier of storable liquid rocket propellant for space launchers and satellites: monomethylhydrazine (MMH), a rocket propellant for the upper stage of Ariane 5 and for geostationary satellites.

In addition to providing aerospace propulsion products – ammonium perchlorate, MMH, Butacene®, Methyl BAPO, copper chromite – **ArianeGroup also applies its expertise and resources to other sectors**, for example the fine chemicals, agro-chemical, and agri-feed industries.



Space chemistry experts at your service Solutions for all your needs

With unrivaled expertise in chemical synthesis and formulation and in chemical engineering, ArianeGroup has all the techniques required to create and deliver the exact the compounds you need.

PRODUCTION ACTIVITIES

› Synthesizing speciality products for a wide range of applications (agrochemical, textiles, space, etc.) such as organohalogen, organophosphorus and organosulfur compounds, ammonium perchlorate, and hydrazines.

› Industrializing new products (cable stripper, etc.).

WHATEVER YOUR PROJECT, WE HAVE THE RESOURCES



ArianeGroup has multi-disciplinary, flexible, adaptable facilities which are unique in Europe, backed up by expert laboratory skills.

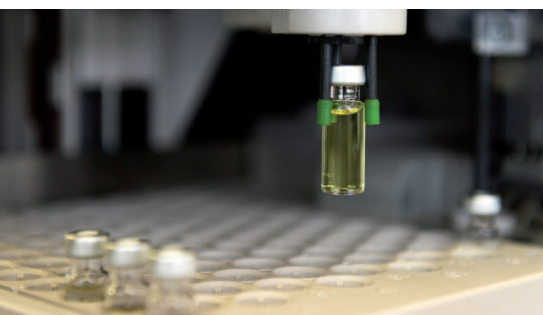
From 250kg up to 50 tons, development testing, small- and large-scale production: we are as flexible as you need.

Industrial and laboratory facilities:

- › reaction capacity ranging from 100L to 6m³
- › development pilots (from grams to kilograms)
- › materials suitable for use in aggressive and/or corrosive (acid/base) environments
- › separation (filtering, distilling, decanting) and drying techniques

- › purification solutions (evaporator for heat-sensitive, high-boiling-point materials)
- › characterization (solid, liquid)

Product packaging from one gram to several tons, and we can dispatch finished products directly to your transport partners



TYPES OF CHEMICAL REACTIONS UNDERTAKEN

ArianeGroup is expert in all the conversion processes required to produce the chemicals requested by the customer.

- › Acylation/Friedel-Crafts acylation
- › Alkylation/alkylation with alkylating agents
- › Esterification
- › Heterocyclic compound synthesis
- › Halogenation
- › Oxidation
- › Condensation reaction/Grignard reaction/Elimination reaction
- › Saponification
- › Decarboxylation
- › Polymerization
- › Access to organohalogen, organosulfur and organophosphate compounds
- › Epoxidation

ArianeGroup: your key partner

At ArianeGroup, we offer a partnering approach which gives you access to all our skills and our production and development capacities to support you in your business activities. Peerless expertise in chemical engineering and processes to support you every step of the way:

- › Joint development and customized industrialization of new products
- › Processes adapted to new regulatory requirements (obsolescence management, Reach, etc.)
- › Production outsourcing solutions

Expert in handling hazardous chemical products, ArianeGroup boasts an impressive list of specialized fields:

- › specific building blocks (formylating agents, chlorinated heterocyclic compounds, isoxazoles, pyrazoles, pyridines, etc.)
- › speciality chemicals (hydrazines, polyacrylate-phosphate, acrylic monomers, PEG acrylate, etc.)
- › bio-based materials (guanidine derivatives, modified vegetable oil, isosorbide and sorbitan derivatives, etc.)

#spaceenablers

CONTACT

STEPHANE MANDOU

Email: stephane.mandou@ariane.group

Phone: + 33 5 57 20 38 67 / + 33 6 77 20 07 53

www.ariane.group



ARIANEGROUP HOLDING

51-61 Route de Verneuil
78130 Les Mureaux, France
www.ariane.group