



## PROPELLANT TANKS

FOR MONOPROPELLANT AND BI-PROPELLANT SYSTEMS

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## A Qualified and Experienced Team for Propellant Tank Development and Production

ArianeGroup develops and produces propellant tanks for chemical monopropellant and bipropellant systems in its tank center in Bremen. The highly experienced team is committed to our customers to deliver best quality at competitive conditions. The wide range of different applications for spacecraft also entails different requirements for the propellant tanks used. ArianeGroup has met this challenging demand by offering different tank types.

The spectrum of different tank types includes surface tension tanks, bladder tanks and propellant tanks for spin stabilized spacecraft. With different geometries, from spherical shell to cassini shape and with volume capacities ranging from 58 liters up to 2100 liters ArianeGroup answers to a wide range of satellite platform requirements. Most tanks are made of titanium to ensure high load at low weight.

Although ArianeGroup has created standard designs to optimize the product line, engineering experience is available for individual customer requirements.

Specialists on the various engineering fields such as:

- › functional performance
- › stress and stability
- › dynamics
- › fracture mechanics
- › designs and manufacturing technology

are available for customer support and specific design aspects.

With new programs, the portfolio is evolving to e.g. membrane tanks for Hydrazine as well as for MON and MMH, smaller tanks for hybrid platforms, tanks featuring liquid Center of Gravity controll geometries and the Orion European Service Module propellant tanks.

ArianeGroup tank center has concentrated most of the assembly, integration and test activities as well as non-destructive inspections on pressure vessels on its own premises. The facilities are newly established and fully equipped to meet the requirements from design to manufacturing, including verification as well as acceptance tests. This also includes materials, tools, measurement equipment and various test facilities. Technicians and engineers perform manufacturing and tests in close cooperation with quality and product assurance in each phase.

ArianeGroup offers customers all services necessary around tanks. A highly qualified team is on standby for assistance from the very beginning of the design process until specification of the mission profile is completed resulting in the optimum type and size of tanks, equipment and performance.

## Heritage

Since the 70's more than 600 propellant tanks have been delivered. Below you will find the main missions of the last years flying with ArianeGroup propellant tanks.

SYRACUS 3A	2005	PLEIADES 1A	2011
ARIANE 521	2005	VEGA	2012
ARIANE 522	2005	ARIANE	2012
MSG 2	2005	ATV FM 3	2012
INSAT 4A	2005	APSTAR 7	2012
AMC 23	2005	MSG 3	2012
HB7A	2006	GSAT 10	2012
THAICOM 5	2006	ASTRA 2F	2012
SYRACUSE 3B	2006	PLEIADES 1B	2012
KOREASAT 5	2006	EUTELSAT 70B (W5A)	2012
GALAXY 17	2007	YAMAL 402	2012
GLOBALSTAR	2007	VEGA	2013
CosmoSkyMed 1	2007	W3D	2013
TerraSAR-X	2007	SES-6	2013
CH6B	2007	ARIANE	2013
ARIANE 526	2007	ATV FM 4	2013
GLOBALSTAR	2007	AMOS 4	2013
STAR ONE C1	2007	ASTRA2E	2013
CosmoSkyMed 2	2007	Athena Fidus	2014
ARIANE 527	2007	ASTRA 5B	2014
RASCOM 1C	2007	VEGA	2014
ATV FM 1	2008	AM4R	2014
ARIANE 528	2008	E3B	2014
STAR ONE C2	2008	ATV FM 5	2014
AMOS 3	2008	ARIANE	2014
CH9	2008	MEASSAT-3b	2014
T3A	2008	ARSAT 1	2014
THEOS	2008	ASTRA 2G	2014
CosmoSkyMed 3	2008	VEGA	2015
ASTRA-1M	2008	EXPRESS AM7	2015
CIEL 2	2008	SICRAL 2	2015
W2M	2008	VEGA	2015
W2A	2009	SENTINEL 2A	2015
SICRAL-1B	2009	MSG 4	2015
PALAPA-D	2009	E8WB	2015
AMAZONAS 2	2009	ARSAT 2	2015
SatcomBW 1	2009	ARABSAT-6B (BADR-7)	2015
THOR 6	2009	VEGA	2015
W7	2009	EXPRESS AMU 1	2015
ASTRA 3B	2010	VEGA	2016
COMSAT BW-2	2010	VEGA	2016
ARABSAT 5B	2010	INTELSAT 32E	2017
TanDEM-X	2010	TELEKOM 3S	2017
NILESAT 201	2010	VEGA	2017
RQ-1R	2010	SENTINEL 2B	2017
W3B	2010	SGDC 1	2017
ARIANE	2011	KOREASAT 7	2017
ATV FM 2	2011	HELLAS SAT3/INMS	2017
ASTRA 1N	2011	VEGA	2017
EXPRESS AM4	2011	KOREASAT 5A	2017
W3C	2011	VEGA	2017



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