

NEWSPACE MARKET · SECTOR CATALOGUE

Chemical Propulsion

Every unit we list in this sector — specifications, manufacturers and where to ask for a quote. Compiled from the live NewSpace Market catalogue.

123

PRODUCTS

44

MANUFACTURERS

18

COUNTRIES

25

WITH DATASHEETS

newspacemarket.com/catalogues/chemical-propulsion/

as of 2 September 2026

What is inside

This catalogue lists **123 chemical propulsion products** offered by **44 manufacturers** across **18 countries**. Of those, 25 carry a manufacturer datasheet and 5 publish a price; the rest are quoted on request — normal in this market, where configuration drives cost.

Entries are grouped alphabetically by manufacturer. Every product links back to its page on newspacemarket.com, where you will find the full specification, the datasheet and a quote form that reaches the manufacturer directly.

Compiled 2 September 2026 from the live catalogue. Specifications are as published by the manufacturers; we normalise units but do not re-measure. Where a figure looked implausible it was left out rather than guessed.

Manufacturers by country

United States 15	India 4	Germany 4	Sweden 2	China 2	Russia 2	Poland 2	Ukraine 2
New Zealand 1	Turkey 1	Austria 1	Japan 1	Norway 1	Spain 1	Israel 1	Italy 1
United Kingdom 1	Argentina 1						

All products at a glance

PRODUCT	MANUFACTURER	COUNTRY	KEY SPECIFICATION	PRICE
1 N GP Thruster	Bradford Space	Sweden	Thrust: 0.25-1 N	on request
1 N HPGP Thruster	Bradford Space	Sweden	Thrust: 0.25-1 N	on request
1-20N Monopropellant System	OHB Sweden AB	Sweden	–	on request
100 mN HPGP Thruster	Bradford Space	Sweden	Thrust: 0.1 N	on request
10N Bipropellant System	OHB Sweden AB	Sweden	–	on request
1N HTP Monopropellant Thruster	Thaliana Space	Poland	Propellant: 98% HTP (monopropellant)	on request
1N Monopropellant Hydrazine Thruster	Rafael Advanced Defense Systems - Space Division	Israel	–	on request
200 N HPGP RCS Thruster	Bradford Space	Sweden	Thrust: 50-200 N	on request
200 N HPGP Thruster	Bradford Space	Sweden	Thrust: 50-200 N	on request
200N Monopropellant Hydrazine Thruster	Rafael Advanced Defense Systems - Space Division	Israel	–	on request
22 N HPGP Thruster	Bradford Space	Sweden	Thrust: 5.5-22 N	on request
25N Monopropellant Hydrazine Thruster	Rafael Advanced Defense Systems - Space Division	Israel	–	on request
3TU Thruster Unit	Glavkosmos	Russia	Purpose: Spacecraft orientation and attitude control.	on request
420N HTP Bipropellant Kick-Stage Engine	Thaliana Space	Poland	Nominal thrust: 420 N (per engine)	on request
5 N HPGP Thruster	Bradford Space	Sweden	Thrust: 1.4-5.5 N	on request
5N Monopropellant Hydrazine Thruster	Rafael Advanced Defense Systems - Space Division	Israel	–	on request
AF-M315E (ASCENT)	Digital Solid State Propulsion	United States	Item #: 315-10	\$3 850
AF-M315E (ASCENT) Green Monopropellant	Digital Solid State Propulsion	United States	Appearance: Translucent, light pink-orange liquid	\$3 850
AIS-SWAG1-QUAD	Applied Ion Systems	United States	Type: Quad Sublimation Warm Gas Thruster	\$12 500
ALBIREO Next-Generation Propulsion System	MIPRONS	–	Propulsion technology: Water electrolysis (H2-02)	on request
ALEXIUS Water-Electrolysis Propulsion System	MIPRONS	–	Mass: ~1.4 kg (1.3-1.5 kg)	on request
ALPHARD Monopropellant Family	T4i - Technology for Propulsion and Innovation	Italy	Propellant (Family Overview): HTP 90 w% (customizable up to 95 w%)	on request
AMBR 556 N Dual Mode High Performance Rocket Engine	Aerojet Rocketdyne (L3Harris)	United States	Thrust: 556 N (125 lbf)	on request

PRODUCT	MANUFACTURER	COUNTRY	KEY SPECIFICATION	PRICE
Apogee Engine Valve	Nammo	Norway	Typical operating media: Typical propulsion fluids	on request
Arcos	Pangea Aerospace	Spain	Propellants: LOX / Methane (methalox)	on request
ATOM	DREAM Aerospace	India	Minimum thrust: 1 N	on request
ATOM Monopropellant Thruster	DREAM Aerospace	India	Thrust: Starting from 1 N	on request
Attitude Control Propulsion Unit	ISS Reshetnev	Russia	–	on request
Attitude Control Thruster Unit Based on Modified Thermocatalytic Low Thrusters	Glavkosmos	Russia	Year of release: 2009	on request
Attitude Control Thruster Unit Based on Thermocatalytic Low Thrusters	Glavkosmos	Russia	Purpose: Spacecraft orientation, attitude control.	on request
B20 Thruster	Dawn Aerospace	New Zealand	Thrust range: 6.46-18.11 N	on request
BE-4 Engine	Blue Origin	United States	Thrust (vacuum): ~2,400 kN per engine	on request
BGT-X5	Busek Co.	United States	Propellant: ASCENT	on request
BGT-X5 Green Monopropellant Thruster	Busek Co.	United States	System Power: 20 W	on request
Bipropellant Low Thrust Rocket Engine	Glavkosmos	Russia	Year of release: 1996	on request
Bipropellant Tank with Stiff-Plastic Separation Devices (Diaphragms)	Glavkosmos	Russia	Purpose: KDU 11D414HC propulsion system for communication satellite.	on request
Bipropellant Thruster	Glavkosmos	Russia	Purpose: Briz-M booster	on request
Bipropellant Thruster 11d	Glavkosmos	Russia	Purpose: Phobos Sample Return Spacecraft	on request
Bipropellant Thruster 17D	Glavkosmos	Russia	Purpose: Multi-impulse attitude control of spacecraft in response to contro...	on request
Blue Orbit Water Resistojet	Blue Orbit Space Systems	Germany	Propellant: Water	on request
BOOSTER	Liftero	Poland	Orbit transfer time: 1 to 3 days	on request
Bradford Miniaturised Pressure Transducer	Bradford Space	Sweden	Model: Miniaturised	on request
Bradford Standard Accuracy Pressure Transducer	Bradford Space	Sweden	Model: Standard	on request
CHIPS CubeSat High Impulse Propulsion System	CU Aerospace	United States	Propellant options: R236fa and R134a (range-safety approved)	on request
Cryox	Pangea Aerospace	Spain	Propellants: LOX / Methane (methalox)	on request
DARUMA Micro Hybrid Propulsion Unit	Letara	Japan	Wet mass: 30 kg	on request
Dawn Aerospace Green Chemical Propulsion Thrusters (B1, B5, B20, B200)	Dawn Aerospace	New Zealand	Thrust, range: 6.46 to 18.11 N (1.45 to 4.07 lbf)	on request

PRODUCT	MANUFACTURER	COUNTRY	KEY SPECIFICATION	PRICE
Dawn Aerospace Thrusters (B1, B5, B20, B200)	Dawn Aerospace	New Zealand	Thrust, range (B20): 6.46 to 18.11 N (1.45 to 4.07 lbf)	on request
E-2 liquid rocket engine	Launcher (VAST subsidiary)	United States	Product: Orbiter orbital transfer vehicle	on request
Electric Jet Engine Propulsion for Suborbital Flight	Astro Mechanica	United States	Concept: Electric jet augmented rocket first stage (air-breathing + chemica...	on request
GATE Thruster L	GATE Space	Austria	Thrust level: 20 – 200 N	€50 000
GEM (Green Electric Monopropellant)	Digital Solid State Propulsion	United States	Chemical basis: Hydroxylammonium nitrate (HAN)-based liquid monopropellant	on request
GEM3 Green Electric Monopropellant	Digital Solid State Propulsion	United States	Appearance: Clear, pink solution	\$100
GP-LAM	Manastu Space	India	Thruster type: 300 N thruster	on request
GP-LAM Liquid Apogee Module	Manastu Space	India	Spacecraft type: OTVs, launch vehicle upper stage, GEO stationary satellite	on request
Green Monopropellant Propulsion System	Yuzhnoye Design Bureau	Ukraine	Working medium: HAN-based monopropellant	on request
Green Propulsion System (4x1N HTP Monopropellant Module)	Thaliana Space	Poland	Propellant: 98% HTP	on request
Green Propulsion Systems (AF-M315E)	Aerojet Rocketdyne (L3Harris)	United States	Propellant: AF-M315E green propellant (hydrazine alternative)	on request
H2O2/HTPB Hybrid Upper Stage	Parabilis Space Technologies	United States	Propellants: H2O2 (hydrogen peroxide) / HTPB	on request
Halcyon	Benchmark Space Systems	United States	Thrust (Monopropellant HTP): 250 mN, 1 N, 5 N, 10 N	on request
High-Test Peroxide Systems – Halcyon	Benchmark Space Systems	United States	Halcyon Monopropellant Thrust Per Thruster: 1 - 10 N	on request
HIP_11 Propulsion System	ISPTech	Germany	Propellant: H2O2 (hydrogen peroxide) + ionic liquid fuel	on request
HPGP 200N Thruster — High-Performance Green Propellant Propulsion	Bradford Space	Sweden	–	on request
HPGP High Performance Green Propellant Thruster	Bradford Space	Sweden	–	on request
Hybrid Propulsion System (HIS)	DELTAV Space Technologies	Turkey	Fuel type: High-performance solid fuel	on request
Hybrid Propulsion Systems	HyImpulse Technologies	Germany	Thrust (SL1 orbital launcher): 90 kN	on request
Hydrazine Monopropellant Rocket Engines	Aerojet Rocketdyne (L3Harris)	United States	Thrust range: 0.02 lbf to 700 lbf	on request

PRODUCT	MANUFACTURER	COUNTRY	KEY SPECIFICATION	PRICE
I-Booster Green Propulsion System	Manastu Space	India	Satellite weight: 100-500 kg	on request
Integrated Propulsion System (IPS)	VACCO Industries	United States	Total impulse: 12,000 N-sec	on request
Kronos	Pangea Aerospace	Spain	Propellants: LOX / Methane (methalox)	on request
Launcher E-2 Liquid Rocket Engine	Launcher (VAST subsidiary)	United States	Engine: E-2 – LOX/RP-1 (liquid oxygen/kerosene), expander-bleed cycle	on request
Liquid Propulsion Systems	DELTAV Space Technologies	Turkey	–	on request
LOx/Methane RCS Thruster	Parabilis Space Technologies	United States	Propellants: LOx (liquid oxygen) / CH4 (methane)	on request
Lyra 1	Tesseract	United States	Name: Lyra 1	on request
Lyra 22	Tesseract	United States	Name: Lyra 22	on request
Modified Thermocatalytic Low Thruster	Glavkosmos	Russia	Purpose: Spacecraft orientation, attitude control, and station keeping	on request
Modified Thermocatalytic Thrusters	Glavkosmos	Russia	Thrust: (5.6 ... 1.0) N	on request
MONARC Monopropellant Thrusters	Moog Space Defense Group	United States	Monarc-1: Thrust 0.9–1 N; Isp 227–235 s; Mass 0.38 kg	on request
Monopropellant Tank with Stiff-Plastic Separation Device (Diaphragm)	Glavkosmos	Russia	Purpose: Phobos Sample Return Mission - International Program: Return Space...	on request
MOTOR MT-B	VENG S.A.	Argentina	Uso: Segunda etapa (óptima) o clúster de primera etapa	on request
MPUC Monopropellant Propulsion Unit for CubeSats	CU Aerospace	United States	Propellant: CMP-X (ethanol/hydrogen peroxide)	on request
MT-B	VENG S.A.	Argentina	Uso: Segunda etapa (óptima) o clúster de primera etapa	on request
MULTI-LAYER BELLOWS	Glavkosmos	Russia	Purpose: Intended for operation as sensing elements, phase separators, seal...	on request
Nanosatellite Mono & Bipropellant Propulsion Thruster	Stellar Exploration, Inc.	United States	Thrust: 3 N	on request
Nereus 20 B	Pangea Aerospace	Spain	Propellant type: Bipropellant (also operable in monopropellant mode)	on request
Nereus 20 M	Pangea Aerospace	Spain	Propellant type: Monopropellant	on request
Nereus 200	Pangea Aerospace	Spain	Propellant type: Bipropellant	on request
Nuclear Thermal Propulsion and RTG Research	CNNC Space (China National Nuclear Corp	China	Technology: Nuclear Thermal Propulsion (NTP), RTGs,	on request

PRODUCT	MANUFACTURER	COUNTRY	KEY SPECIFICATION	PRICE
	Space)		compact fission reactors	
PEPT-230 Diaphragm Propellant Tank	Rafael Advanced Defense Systems - Space Division	Israel	–	on request
PEPT-260 Diaphragm Propellant Tank	Rafael Advanced Defense Systems - Space Division	Israel	–	on request
PEPT-420N Diaphragm Propellant Tank	Rafael Advanced Defense Systems - Space Division	Israel	–	on request
Peregrine Bipropellant Thruster System	Benchmark Space Systems	United States	Propellant: HTP (High-Test Peroxide) + Alcohol	on request
Pressure Stabilization Unit	Glavkosmos	Russia	Purpose: Pressure Stabilization	on request
Pressure Vessels and Cryogenic Tanks	MT Aerospace	Germany	Products: COPVs, cryogenic tanks (LOX/LH2), solid motor casings, payload fa...	on request
Prometheus-1 Small Liquid Rocket Engine	Promin Aerospace	Ukraine	Engine type: Liquid propellant rocket engine (small class)	on request
Propulsion Products and Services	Northrop Grumman Space Systems	United States	Mre-0.1 thrust: 0.4 N @ 350 psia; Isp 216 sec; 0.5 kg; 180x38 mm	on request
R-1E 110 N Bipropellant Rocket Engine	Aerojet Rocketdyne (L3Harris)	United States	Thrust: 110 N (25 lbf)	on request
R-42 890 N Bipropellant Rocket Engine	Aerojet Rocketdyne (L3Harris)	United States	Thrust: 890 N (200 lbf)	on request
R-42DM 890 N Dual Mode High Performance Rocket Engine	Aerojet Rocketdyne (L3Harris)	United States	Thrust: 890 N (200 lbf)	on request
R-4D-11 490 N Bipropellant Rocket Engine	Aerojet Rocketdyne (L3Harris)	United States	Thrust: 490 N (110 lbf)	on request
R-4D-15 HiPAT 445 N High Performance Rocket Engine	Aerojet Rocketdyne (L3Harris)	United States	Thrust: 445 N (100 lbf)	on request
R-6F 22 N Bipropellant Rocket Engine	Aerojet Rocketdyne (L3Harris)	United States	Thrust: 22 N (5 lbf)	on request
RD-120MS	Glavkosmos	Russia	Thrust, earth / void, tf: - / 93	on request
RD-171 M	Glavkosmos	Russia	Purpose: Engines for the first stage of the Zenit launch vehicle.	on request
RD-180	Glavkosmos	Russia	Purpose: Engines for the first stage of the Atlas launch vehicle family.	on request
RD-181	Glavkosmos	Russia	Purpose: Engines for the first stage of the advanced Antares launch vehicle.	on request
Rigel 500	Tesseract	United States	Name: Rigel 500	on request
RL-10 Upper Stage Engine Family	Aerojet Rocketdyne (L3Harris)	United States	Propellants: Fuel: liquid hydrogen; Oxidizer: liquid oxygen	on request

PRODUCT	MANUFACTURER	COUNTRY	KEY SPECIFICATION	PRICE
RS-25 Rocket Engine — Space Launch System Core Stage Propulsion	Aerojet Rocketdyne (L3Harris)	United States	Cycle: Staged combustion	on request
Rudra Green Propulsion Thruster Series	Bellatrix Aerospace	India	Rudra-1 - thrust: 1 N	on request
SmallSat Hybrid Propulsion Module	Parabilis Space Technologies	United States	Satellite class: CubeSat through ESPA Grande	on request
Station Keeping Thruster Unit Based on Modified Thermocatalytic Thrusters	Glavkosmos	Russia	Purpose: Spacecraft station keeping	on request
Station Keeping Thruster Unit Based on Thermocatalytic Thrusters	Glavkosmos	Russia	Purpose: Spacecraft station keeping.	on request
TH-11	Space Pioneer (Tianbing Technology)	China	Propellant: Liquid Oxygen + Kerosene	on request
TH-12	Space Pioneer (Tianbing Technology)	China	Propellant: Liquid Oxygen + Kerosene	on request
TH-31	Space Pioneer (Tianbing Technology)	China	Type: Bipropellant pressure-fed	on request
Thermocatalytic Low Thruster	Glavkosmos	Russia	Purpose: Spacecraft orientation, attitude control, and station keeping	on request
Thermocatalytic Thrusters	Glavkosmos	Russia	Thrust: 5.6 ... 1.0 (7.0 ... 4.0) N	on request
Thrust Vector Control (TVC) System	AADYAH Aerospace	India	Tvc methods: Flex Nozzle, Engine Gimbaling, Liquid Injection (LITVC)	on request
TU1 Thruster Unit Based on Modified Thermocatalytic Low Thruster	Glavkosmos	Russia	Year of release: 2013	on request
TU3 Truster Unit Based on Modified Thermocatalytic Low Thrusters	Glavkosmos	Russia	Purpose: Spacecraft orientation and attitude control.	on request
URA ICE Thruster (Electrolysis Chip Thruster)	URA Thrusters	United Kingdom	Model: ICE-10	on request
Working Medium Tank MVSK	Glavkosmos	Russia	Purpose: Monopropellant propulsion system for spacecraft	on request

Products by manufacturer

Aerospace company supporting space exploration missions; partners with ISRO, Skyroot, Orbex, Bellatrix, and Latitude on lunar and Mars programmes.



AADYAH AEROSPACE
Thrust Vector Control (TVC) System

Thrust Vector Control systems for solid and hybrid motor launch vehicles using flex nozzle, engine gimbaling, or liquid injection — flight-tested, AS9100D certified.

Tvc methods	Flex Nozzle, Engine Gimbaling, Liquid Injection (LITVC)
Vehicle types	Solid and hybrid motor launch vehicles
Integration	GNC system and flight avionics compatible
Quality standard	AS9100D certified

price on request

Aerojet Rocketdyne (L3Harris)

Major US propulsion company (now part of L3Harris); RL10, RS-25/SLS engines, satellite thrusters, and solid rocket motors; 75+ years heritage powering US launch vehicles.



AEROJET ROCKETDYNE (L3HARRIS)
AMBR 556 N Dual Mode High Performance Rocket Engine

556 N (125 lbf) Advanced Materials Bipropellant Rocket dual mode high performance engine for deep space and GEO missions.

Thrust	556 N (125 lbf)
Type	Dual mode high performance rocket engine
Propellants	Hydrazine or MMH fuel with NTO oxidizer

price on request

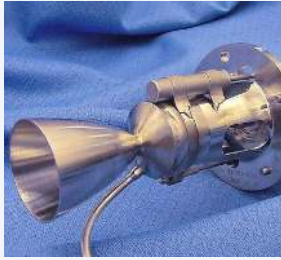


AEROJET ROCKETDYNE (L3HARRIS)
Green Propulsion Systems (AF-M315E)

Non-hydrazine green propellant propulsion, including modular 1U to 8U CubeSat propulsion systems offering up to 750 m/s delta-v.

Propellant	AF-M315E green propellant (hydrazine alternative)
Performance	50 percent higher performance than a traditional hydrazine system
CUBESAT module sizes	1U to 8U
Delta-v capability	Up to 750 m/s
Flight demonstration	NASA Green Propellant Infusion Mission (GPIM)

price on request



AEROJET ROCKETDYNE (L3HARRIS)
Hydrazine Monopropellant Rocket Engines

Hydrazine monopropellant engine family from 0.02 lbf to 700 lbf thrust, with more than 19,000 units delivered.

Thrust range	0.02 lbf to 700 lbf
Propellant	Hydrazine (catalytic decomposition)
Units delivered	More than 19,000
Applications	Planetary transit course corrections, orbital capture and insertion, landing, precision po

price on request



AEROJET ROCKETDYNE (L3HARRIS)
R-1E 110 N Bipropellant Rocket Engine

110 N (25 lbf) storable bipropellant rocket engine for in-space maneuvering and attitude control.

Thrust	110 N (25 lbf)
Type	Bipropellant rocket engine
Propellants	Hydrazine or MMH fuel with NTO oxidizer

price on request



AEROJET ROCKETDYNE (L3HARRIS)
R-42 890 N Bipropellant Rocket Engine

890 N (200 lbf) storable bipropellant rocket engine for orbit raising and in-space maneuvering.

Thrust	890 N (200 lbf)
Type	Bipropellant rocket engine
Propellants	Hydrazine or MMH fuel with NTO oxidizer

price on request



AEROJET ROCKETDYNE (L3HARRIS)
R-42DM 890 N Dual Mode High Performance Rocket Engine

890 N (200 lbf) dual mode high performance rocket engine for spacecraft orbit raising and maneuvering.

Thrust	890 N (200 lbf)
Type	Dual mode high performance rocket engine
Propellants	Hydrazine or MMH fuel with NTO oxidizer

price on request



AEROJET ROCKETDYNE (L3HARRIS)
R-4D-11 490 N Bipropellant Rocket Engine

490 N (110 lbf) bipropellant rocket engine from the R-4D family originally developed for the Apollo programme.

Thrust	490 N (110 lbf)
Type	Bipropellant rocket engine
Propellants	Hydrazine or MMH fuel with NTO oxidizer
Family	R-4D

price on request



AEROJET ROCKETDYNE (L3HARRIS)
R-4D-15 HiPAT 445 N High Performance Rocket Engine

445 N (100 lbf) high performance bipropellant apogee engine, available in dual mode configuration; the R-4D lineage is the world's most reliable apogee insertion engine.

Thrust	445 N (100 lbf)
Type	Bipropellant; high performance and dual mode high performance configurations
Propellants	Hydrazine or MMH fuel with NTO oxidizer

Flight record (R-4D family)	Over 390 apogee-insertion missions for GEO satellites, 100% success rate
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price on request



AEROJET ROCKETDYNE (L3HARRIS) R-6F 22 N Bipropellant Rocket Engine

22 N (5 lbf) storable bipropellant rocket engine for fine in-space maneuvering and attitude control.

Thrust	22 N (5 lbf)
Type	Bipropellant rocket engine
Propellants	Hydrazine or MMH fuel with NTO oxidizer

price on request



AEROJET ROCKETDYNE (L3HARRIS) RL-10 Upper Stage Engine Family

Liquid hydrogen / liquid oxygen upper-stage engine family powering Atlas V, Delta IV Heavy, Vulcan Centaur and NASA SLS, in service for six decades.

Propellants	Fuel: liquid hydrogen; Oxidizer: liquid oxygen
RL10b-2 / RL10c-2-1 (Delta IV)	Thrust 24,750 lbf; weight 664 lbs; MR 5.88:1; Isp 465.5 s; length 86.5 in stowed / 163.5 in
RL10a-4-2 (Atlas V)	Thrust 22,300 lbf; weight 370 lbs; MR 5.5:1; Isp 451.0 s; length 90 in; nozzle diameter 46
RL10c-1 (Atlas V)	Thrust 22,890 lbf; weight 420 lbs; MR 5.5:1; Isp 449.7 s; length 86 in; nozzle diameter 57
RL10c-1-1 (Atlas V, Vulcan Centaur)	Thrust 23,825 lbf; weight 415 lbs; MR 5.5:1; Isp 453.8 s; length 96.7 in; nozzle diameter

price on request



AEROJET ROCKETDYNE (L3HARRIS) RS-25 Rocket Engine — Space Launch System Core Stage Propulsion

Staged-combustion LH2/LOX core stage engine for NASA's Space Launch System, evolved from the Space Shuttle Main Engine.

Cycle	Staged combustion
Propellants	Fuel: liquid hydrogen; Oxidizer: liquid oxygen; mixture ratio (O/F) 6.0
Thrust at 109% power level	Vacuum 512,300 lb; sea level 418,000 lb
Chamber pressure	2,994 psia
Specific impulse at 109% power level	Vacuum 452 s; sea level 366 s

price on request

Applied Ion Systems develops and tests micro End Hall Thrusters for electric propulsion.



APPLIED ION SYSTEMS

AIS-SWAG1-QUAD

The AIS-SWAG1-QUAD is a Sublimation Warm Gas Thruster designed for CubeSats, offering 480uN of thrust and a total impulse of 12Ns, enabling significant orbital movement for small s

Type	Quad Sublimation Warm Gas Thruster
Fuel	Solid Unpressurized Adamantane
Power	20 W
Thrust	480uN
Operating lifetime	7 hours

\$12 500

Astro Mechanica

US aerospace startup developing lightweight aviation jet engines using novel manufacturing techniques to dramatically reduce cost and weight.



ASTRO MECHANICA

Electric Jet Engine Propulsion for Suborbital Flight

Astro Mechanica's electric jet engine augmented rocket first stage — using turbine-driven air-breathing propulsion at low altitude to reduce propellant mass and improve launch econ

Concept	Electric jet augmented rocket first stage (air-breathing + chemical propulsion)
Advantage	Reduces LOx mass required in dense lower atmosphere
Operating range	Ground level through transonic (Mach 0.8–1.2)
Funding	AFRL SBIR (US Air Force Research Laboratory)

Stage Technology development / engine testing

price on request

Bellatrix Aerospace

INDIA · 2015 · 1 PRODUCT

Indian in-space propulsion company developing electric and green chemical thrusters and orbital transfer vehicles for missions from nanosatellites to GEO platforms.



BELLATRIX AEROSPACE

Rudra Green Propulsion Thruster Series

Green monopropellant thruster family (1 N, 5 N, 100 N) offering a non-toxic alternative to hydrazine.

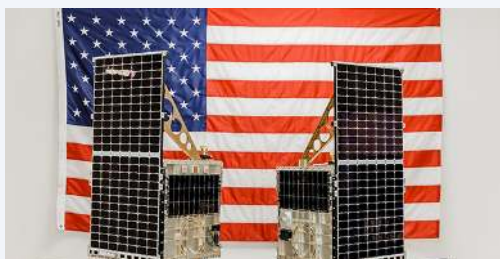
Rudra-1 - thrust	1 N
Rudra-1 - impulse bit	<50 mN·s
Rudra-1 - vacuum ISP	235 s
Rudra-5 - thrust	5 N
Rudra-5 - impulse bit	<0.1 N·s

price on request

Benchmark Space Systems

UNITED STATES · 3 PRODUCTS

US propulsion company in Burlington, VT; 39 chemical and 19 electric systems launched; chemical, electric, and hybrid thrusters with full mission assurance.



BENCHMARK SPACE SYSTEMS

Halcyon

Halcyon is Benchmark Space Systems' flagship non-toxic ('green') chemical propulsion product line, offering catalytic monopropellant and dual-mode bipropellant thrusters built around

Thrust (Monopropellant HTP)	250 mN, 1 N, 5 N, 10 N
Thrust (Dual-Mode Bipropellant)	2 N, 10 N, 22 N
Specific impulse (Monopropellant)	150-170 s
Specific impulse (Bipropellant)	290-310 s
Propellant	High-Test Peroxide monopropellant; HTP + fuel



BENCHMARK SPACE SYSTEMS

High-Test Peroxide Systems – Halcyon

Benchmark Space Systems offers High-Test Peroxide (HTP) propulsion systems, including the Halcyon monopropellant and Halcyon Avant bipropellant thrusters, designed for high-thrust

Halcyon Monopropellant Thrust Per Thruster	1 - 10 N
Halcyon Monopropellant Specific Impulse	155 - 160 s
Halcyon Avant Bipropellant Thrust Per Thruster	20 N

injection bipropellant

[price on request](#) [datasheet](#)

Halcyon Avant Bipropellant

270 - 280 s

Specific Impulse

Missions Enabled

14

[price on request](#) [datasheet](#)



BENCHMARK SPACE SYSTEMS

Peregrine Bipropellant Thruster System

Green bipropellant propulsion system for 6U to ESPA-class satellites. HTP + Alcohol, >270 s Isp, 100 mN–22 N thrust, ODPS pressurization.

Propellant	HTP (High-Test Peroxide) + Alcohol
Specific impulse	> 270 s
Thrust range	100 mN – 22 N
Minimum impulse bit	< 0.5 mN·s
Dry mass	4.0 kg

[price on request](#)

Blue Orbit Space Systems

GERMANY · 1 PRODUCT

Blue Orbit Space Systems is a German deep-tech startup based in Bremen that develops electric propulsion systems for small satellites and plasma-based solutions for industrial applications.



BLUE ORBIT SPACE SYSTEMS

Blue Orbit Water Resistojet

Water-propellant resistojet for LEO in two configurations: 270 g at 3.3–4.4 mN and 250 g at 27–30 mN, both around 103–108 s Isp.

Propellant	Water
Configuration 1 - mass	270 g
Configuration 1 - dimensions	55 x 33 x 122 mm
Configuration 1 - power	10 - 18 W (estimate)
Configuration 1 - thrust	3.3 - 4.4 mN (estimate)

[price on request](#) [datasheet](#)

Blue Origin

UNITED STATES · 2000 · 1 PRODUCT



BLUE ORIGIN

BE-4 Engine

High-thrust LOX/LNG rocket engine powering New Glenn and Vulcan Centaur, designed for high reusability.

Thrust (vacuum)	~2,400 kN per engine
Propellant	LOX / LNG (liquefied natural gas)
Cycle	Oxidizer-rich staged combustion
Reusability target	25+ flights per engine
Applications	New Glenn (×7 first stage); Vulcan Centaur (×2)

price on request

Bradford Space

SWEDEN · 2000 · 11 PRODUCTS

Swedish green propulsion pioneer; HPGP / LMP-103S thrusters using ADN propellant with 12% higher Isp than hydrazine; Bradford ENOVIA group.

BRADFORD SPACE

1 N GP Thruster

Green propellant thruster variant delivering 1 N thrust for low-toxicity attitude control and delta-V maneuvers.

Thrust	0.25-1 N
Propellant	LMP-103S (ADN-based, non-toxic)
Function	AOCS + ΔV

price on request

BRADFORD SPACE

1 N HPGP Thruster

Flight-proven HPGP monopropellant thruster delivering 0.25-1 N thrust, used for AOCS and delta-V on CubeSats to smallsats.

Thrust	0.25-1 N
Specific impulse	204-231 s
Mass	0.39 kg
Pulse count	60,000
Feed pressure	5.5-22 bar

price on request

BRADFORD SPACE

100 mN HPGP Thruster

Low-toxicity ADN-based HPGP monopropellant thruster delivering 0.1 N thrust for AOCS and small delta-V maneuvers.

Thrust	0.1 N
Specific impulse	≥190 s
Mass	0.04 kg
Pulse count	2,000
Feed pressure	2.3-4.5 bar

price on request

BRADFORD SPACE

200 N HPGP RCS Thruster

Reaction control system configuration of the 200 N HPGP monopropellant thruster for high-thrust attitude and orbit control.

Thrust	50-200 N
Specific impulse	206-234 s
Mass	5.7 kg
Pulse count	2,000
Feed pressure	5.5-24 bar

price on request

BRADFORD SPACE**200 N HPGP Thruster**

High-thrust HPGP monopropellant engine delivering 50-200 N for reaction control system (RCS) applications.

Thrust	50-200 N
Specific impulse	206-234 s
Mass	5.7 kg
Pulse count	2,000
Feed pressure	5.5-24 bar

[price on request](#)**BRADFORD SPACE****5 N HPGP Thruster**

Mid-class HPGP monopropellant thruster delivering 1.4-5.5 N thrust for AOCS and delta-V on small and medium satellites.

Thrust	1.4-5.5 N
Specific impulse	220-245 s
Mass	0.45 kg
Pulse count	50,000
Feed pressure	5.5-24 bar

[price on request](#)**BRADFORD SPACE****22 N HPGP Thruster**

High-endurance HPGP monopropellant thruster delivering 5.5-22 N thrust for AOCS and delta-V maneuvers on medium satellites.

Thrust	5.5-22 N
Specific impulse	235-250 s
Mass	1.0 kg
Pulse count	50,000
Feed pressure	5.5-24 bar

[price on request](#)**BRADFORD SPACE****Bradford Miniaturised Pressure Transducer**

Ultra-compact 180 g space-qualified pressure transducer, 3-320 bar range, $\pm 0.3\%$ FS accuracy, for small spacecraft propulsion systems.

Model	Miniaturised
Max pressure range	3-320 bar
Accuracy (BoL)	$\pm 0.3\%$ FS
Accuracy (EoL)	$\pm 0.4\%$ FS
Mass	180 g

[price on request](#)[datasheet](#)**BRADFORD SPACE****Bradford Standard Accuracy Pressure Transducer**

Space-qualified pressure transducer, 1-310 bar range, $\pm 0.3\%$ FS BoL accuracy, 250 g, compatible with hydrazine, MON, MMH and other propellants.

Model	Standard
Max pressure range	1-310 bar
Accuracy (BoL)	$\pm 0.3\%$ FS
Accuracy (EoL)	$\pm 0.4\%$ FS
Mass	250 g

[price on request](#)[datasheet](#)**BRADFORD SPACE****HPGP 200N Thruster — High-Performance Green Propellant Propulsion**

Bradford ECAPS (part of Bradford Space) is a Swedish space propulsion company developing High Performance Green Propellant (HPGP) thrusters using LMP-103S propellant — a non-toxic,

[price on request](#)

BRADFORD SPACE

HPGP High Performance Green Propellant Thruster

Bradford ECAPS (a subsidiary of Bradford Space) is a Swedish aerospace company and world leader in High Performance Green Propellant (HPGP) propulsion systems. Their thrusters use

[price on request](#)

Busek Co.

UNITED STATES · 1985 · 2 PRODUCTS

Busek Co. Inc. designs, develops, and manufactures electric propulsion thrusters and related space hardware for military, government, and commercial satellites, with a focus on Hall, electrospray, RF



BUSEK CO.

BGT-X5

BGT-X5 Green Monopropellant Thruster

Busek's BGT-X5 is a 0.5N green monopropellant thruster system delivering 565 N-s of total impulse within a 1U CubeSat volume, using the stable ASCENT propellant as a hydrazine alte

Busek's Green Monopropellant Thrusters feature a patented monolithic catalyst that is efficient yet extremely robust, with available thruster sizes ranging from 0.1N to 22N class.

Propellant	ASCENT	System Power	20 W
Thrust	500 mN nominal	Input Voltage	6-16 VDC (nominal 12 V)
Specific impulse	220-225 s	Interface	RS-422
Total impulse	565 N-s	Propellant	ASCENT
System power	20 W	Thrust	500 mN nominal

[price on request](#) [datasheet](#)

[price on request](#) [datasheet](#)

CNNC Space (China National Nuclear Corp Space)

CHINA · 1955 · 1 PRODUCT

Chinese state-owned nuclear enterprise founded 1955 in Beijing overseeing civilian nuclear power, fuel production, and uranium mining; uses satellite remote sensing for exploration and researches nuclear space propulsion.

CNNC SPACE (CHINA NATIONAL NUCLEAR CORP SPACE)

Nuclear Thermal Propulsion and RTG Research

CNNC Space's research into nuclear thermal propulsion (NTP) systems and radioisotope thermoelectric generators for China's deep-space exploration program.

Technology	Nuclear Thermal Propulsion (NTP), RTGs, compact fission reactors
Ntp ISP	800-1,000 s (vs. ~450 s for chemical propulsion)
Mars mission benefit	Reduces transit from 7-9 months to ~3-4 months
Flight heritage	Chang'e lunar RHU (heating units); Soviet/US NTP flight test base

Target	Lunar base power (2030s) and crewed Mars mission propulsion
price on request	

CU Aerospace

UNITED STATES · 2 PRODUCTS

Small satellite propulsion systems developer specializing in electric and chemical thrusters for CubeSats and small spacecraft.



CU AEROSPACE
CHIPS CubeSat High Impulse Propulsion System

Miniaturized propulsion combining main thruster with 3-axis attitude control — non-toxic self-pressurizing propellants, 120M+ valve actuations, 0.54U CHIPS-180 variant.

Propellant options	R236fa and R134a (range-safety approved)
Chips-180 size	0.54U
Chips-180 total impulse	180 N·s
Valve cycle life	>120 million actuations
Temperature rise	~1°C per 10-min cycle

price on request



CU AEROSPACE
MPUC Monopropellant Propulsion Unit for CubeSats

High-thrust monopropellant propulsion using proprietary CMP-X ethanol/hydrogen-peroxide blend — safer, lower-cost alternative to hydrazine, >2,000 Ns total impulse.

Propellant	CMP-X (ethanol/hydrogen peroxide)
Flame temperature	~900°C
Demonstrated ISP	178 s at 230 mN thrust
Continuous firing demonstrated	>50 minutes
Freeze temperature	<-33°C

price on request

Dawn Aerospace

NEW ZEALAND · 2018 · 3 PRODUCTS

New Zealand and Netherlands aerospace company developing the Mk-II Aurora reusable spaceplane and refuellable in-space propulsion systems for satellite missions.



DAWN AEROSPACE
B20 Thruster

A 20 N-class green bipropellant thruster from Dawn Aerospace using non-toxic nitrous oxide and propene propellants, designed for reliable, repeatable spacecraft propulsion from gro

Thrust range	6.46-18.11 N
Specific impulse (vacuum)	240-285+ s
Propellant	Nitrous oxide oxidizer / propene fuel, self-



DAWN AEROSPACE
Dawn Aerospace Green Chemical Propulsion Thrusters (B1, B5, B20, B200)

Dawn Aerospace offers a family of non-toxic 'green' chemical propulsion thrusters (B1, B5, B20, B200) using nitrous oxide and propene, designed for reliable and scalable spacecraft

Thrust, range	6.46 to 18.11 N (1.45 to 4.07 lbf)
Minimum impulse bit bi-prop	0.98 N.s (0.22 lbf.s)
Cold-gas	10 mN.s (0.02 lbf.s)

	pressurizing non-toxic bipropellant
Restarts	10,000+ per thruster, unlimited cold starts
Ignition type	Spark-based, cold-start to full thrust in under 100 ms
price on request	

Ignition	Spark-based igniter
Pulse frequency	4 Hz
price on request datasheet	



DAWN AEROSPACE	
Dawn Aerospace Thrusters (B1, B5, B20, B200)	
Dawn Aerospace offers a range of non-toxic 'green' chemical propulsion thrusters (B1, B5, B20, B200) using nitrous oxide and propene, designed for various spacecraft sizes and miss	
Thrust, range (B20)	6.46 to 18.11 N (1.45 to 4.07 lbf)
Minimum impulse bit (b20) bi-prop	0.98 N.s (0.22 lbf.s)
Minimum impulse bit (b20) cold-gas	10 mN.s (0.02 lbf.s)
Ignition (B20)	Spark-based igniter
Pulse frequency (B20)	4 Hz
price on request datasheet	

DELTA V Space Technologies

TURKEY · 2018 · 2 PRODUCTS

Turkish aerospace company developing hybrid rocket propulsion, cryogenic systems, composite structures, and in-space propulsion — with a sounding rocket exceeding 200 km altitude and a hybrid propulsion system for Turkey's lunar hard landin



DELTA V SPACE TECHNOLOGIES	
Hybrid Propulsion System (HIS)	
A domestically-developed hybrid rocket propulsion system by DELTAV Space Technologies, designed for Turkey's AYAP-1 lunar hard-landing mission and adaptable to orbital missions.	
Fuel type	High-performance solid fuel
Average thrust	650 N
Specific impulse	290 s
Firing duration	100+100 seconds (two burns)
Fuel mass	30 kg



DELTA V SPACE TECHNOLOGIES	
Liquid Propulsion Systems	
DELTA V Space Technologies develops single and dual liquid-fueled propulsion systems for spacecraft maneuvering and high-performance applications, utilizing green fuels for safety a	
price on request	

price on request

Digital Solid State Propulsion

UNITED STATES · 2005 · 4 PRODUCTS

Developer and producer of safe, electrically-throttled 'green' energetic materials and propellants for defense, space, and commercial markets.



DIGITAL SOLID STATE PROPULSION AF-M315E (ASCENT)

AF-M315E (ASCENT) is a high-performance, less toxic green monopropellant developed by AFRL and licensed to DSSP, offering an alternative to hydrazine for propulsion systems.

Item #	315-10
Qty	10lb (1gal)
Price	\$3850
Item # (2)	315-50
Qty (2)	50lb (5gal)

\$3 850

[datasheet](#)



DIGITAL SOLID STATE PROPULSION AF-M315E (ASCENT) Green Monopropellant

HAN-based green liquid monopropellant, higher performance and lower toxicity than hydrazine, used in NASA GPIM.

Appearance	Translucent, light pink-orange liquid
Specific gravity	1.46
Freezing point	Does not freeze; glasses at -80°C
Ph	3.7-4.0
Viscosity	23 cP at 25°C

\$3 850

[datasheet](#)



DIGITAL SOLID STATE PROPULSION GEM (Green Electric Monopropellant)

HAN-based liquid monopropellant family, electrically ignitable or catalyst-bed ignitable, in GEM3 and Sierra GEM variants.

Chemical basis	Hydroxylammonium nitrate (HAN)-based liquid monopropellant
Ignition method	Electric ignition or catalyst bed ignition
Hazard classification	1.4C
Variants	GEM3 (propulsion-grade, comparable to AF-M315E); Sierra GEM (high-temperature stability, o
Regulatory requirement	Current ATF permit and end-user agreement required for purchase

price on request

[datasheet](#)



DIGITAL SOLID STATE PROPULSION GEM3 Green Electric Monopropellant

HAN-based electrically-ignited monopropellant, comparable to AF-M315E with faster ignition.

Appearance	Clear, pink solution
Viscosity	Approximately 20 centipoise at 25°C
Ph	2 to 4
Decomposition temperature	Approx. 170°C
Melting/freezing point	Less than 0°C (32°F)

\$100

[datasheet](#)

Indian space startup pioneering green propulsion systems for CubeSats and small satellites.

DREAM AEROSPACE

ATOM

ATOM is a next-generation monopropellant thruster designed for CubeSats, offering high-performance thrust starting from 1N using an eco-friendly, non-toxic propellant.

Minimum thrust

1 N

Compatible platforms

1U to 26U+ CubeSats

Propellant

Green monopropellant (nontoxic)

price on request



DREAM AEROSPACE

ATOM Monopropellant Thruster

Next-generation monopropellant thruster using eco-friendly, nontoxic propellant — starting from 1N thrust, for 1U to 26U+ CubeSats, 30x more agile than electric propulsion.

Thrust

Starting from 1 N

Compatible platforms

1U to 26U+ CubeSats

Propellant

Eco-friendly, nontoxic monopropellant

price on request

GATE Space

AUSTRIA · 1 PRODUCT

Austrian manufacturer of high-thrust chemical propulsion systems for satellite mobility and orbit control.



GATE SPACE

GATE Thruster L

High-precision chemical thruster with closed-loop pressure control, 20-200 N thrust range.

Thrust level

20 – 200 N

Lead time

9-12 months

Base price

€50,000

Throttling ratio

1:10

Minimum impulse bit

2 Ns

€50 000

Chemical Propulsion · NewSpace Market · newspacemarket.com

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Glavkosmos coordinates international human spaceflight projects, facilitates satellite launches, develops and supplies rocket components, and provides equipment for space crews.



GLAVKOSMOS
3TU Thruster Unit

The 3TU Thruster Unit is a hydrazine-fueled propulsion system designed for spacecraft orientation and attitude control, featuring eight thermocatalytic low thrusters.

Purpose	Spacecraft orientation and attitude control.
Year of release	1999
Design life	10.5 years
Lead time	12 months
Flight qualification of the product	Yes

price on request



GLAVKOSMOS
Attitude Control Thruster Unit Based on Modified Thermocatalytic Low Thrusters

A spacecraft attitude control thruster unit utilizing two modified thermocatalytic low thrusters, designed for orientation and attitude adjustments.

Year of release	2009
Design life	10 years
Lead time	12 months
Flight qualification of the product	Yes
Possibility to adapt the product to customer requirements	Yes

price on request



GLAVKOSMOS
Attitude Control Thruster Unit Based on Thermocatalytic Low Thrusters

A thermocatalytic low thruster unit designed for spacecraft orientation and attitude control, using hydrazine propellant.

Purpose	Spacecraft orientation, attitude control.
Year of release	1999
Design life	10.5 years
Lead time	12 months
Flight qualification of the product	Yes

price on request



GLAVKOSMOS
Bipropellant Low Thrust Rocket Engine

A bipropellant low-thrust rocket engine, flight-qualified and adaptable to customer requirements, released in 1996.

Year of release	1996
Flight qualification of the product	Letter "01", flight use
Possibility to adapt the product to customer requirements	Yes

price on request



GLAVKOSMOS

Bipropellant Tank with Stiff-Plastic Separation Devices (Diaphragms)

A bipropellant tank with stiff-plastic separation devices (diaphragms) designed for the KDU 11D414HC propulsion system of communication satellites, qualified for flight use.

Purpose	KDU 11D414HC propulsion system for communication satellite.
Flight qualification of the product	Letter "0", flight use
Possibility to adapt the product to customer requirements	Yes
Propellants, fuel/oxidizer	UDMH/NTO
Operating pressure, not over	2.94 MPa

price on request



GLAVKOSMOS

Bipropellant Thruster

A bipropellant thruster designed for the Briz-M booster, providing attitude control for spacecraft using UDMH/NTO propellants.

Purpose	Briz-M booster
Year of release	2005
Flight qualification of the product	Letter "0", flight use
Brief history of flight qualification	By the beginning of 2019 the 11D458M thrusters numbering 260 have provided successful service
Possibility to adapt the product to customer requirements	Yes

price on request



GLAVKOSMOS

Bipropellant Thruster 11d

The Bipropellant Thruster 11d is a flight-qualified propulsion unit designed for spacecraft attitude control, utilizing UDMH/NTO propellants.

Purpose	Phobos Sample Return Spacecraft
Flight qualification of the product	Letter "0", flight use
Possibility to adapt the product to customer requirements	Yes
Propellants, fuel/oxidizer	UDMH/NTO
Nominal thrust	53.9 N

price on request



GLAVKOSMOS

Bipropellant Thruster 17D

Flight-proven 13.3 N UDMH/NTO thruster (0.55 kg, 450,000 starts, Isp 2688 m/s) flown on MIR, ISS Zarya module, Briz, and Strela.

Purpose	Multi-impulse attitude control of spacecraft in response to control system triggering command
Year of release	1985
Flight heritage	ALMAZ orbital station; BRIZ booster units; KVANT-2, KRISTALL, SPEKTR, PRIRODA (MIR station)
Customization	Can be adapted to customer requirements
Propellants	UDMH / NTO

price on request



GLAVKOSMOS

Modified Thermocatalytic Low Thruster

A hydrazine monopropellant thermocatalytic thruster used for spacecraft orientation, attitude control, and station keeping, with flight-qualified heritage on multiple Russian satel

Purpose	Spacecraft orientation, attitude control, and station keeping
Year of release	2009
Design life	10.5 years
Lead time	10 months
Flight qualification of the product	Yes

price on request



GLAVKOSMOS

Modified Thermocatalytic Thrusters

Propellant - hydrazine. The main thruster component parts are: a decomposition chamber with a catalyst element and a nozzle, a propellant injection unit, two small-size solenoid va

Thrust	(5.6 ... 1.0) N
Propellant inlet pressure	(883..204) kPa
Specific impulse in a continuous mode of operation	(220..214) s
Life in terms of propellant throughput	20 kg
Life in terms of number of cycles	50 cycles

price on request



GLAVKOSMOS

Monopropellant Tank with Stiff-Plastic Separation Device (Diaphragm)

A monopropellant tank with a stiff-plastic separation device (diaphragm) designed for spacecraft propulsion systems, capable of storing and feeding UDMH and NTO propellants.

Purpose	Phobos Sample Return Mission - International Program: Return Spacecraft Propulsion System.
Year of release	2011
Flight qualification of the product	Letter "0", flight use
Possibility to adapt the product to customer requirements	Yes
Propellant	UDMH, NTO

price on request



GLAVKOSMOS

MULTI-LAYER BELLOWS

Multi-layer bellows designed for use as sensing elements, phase separators, sealing devices, and power unit components in various atmospheres, particularly suitable for liquid rock

Purpose	Intended for operation as sensing elements, phase separators, sealing devices as well as p
Year of release	2007
Design life	6 years
Lead time	2 months
Flight qualification of the product	No

price on request



GLAVKOSMOS

Pressure Stabilization Unit

The Pressure Stabilization Unit (PSU) is a flight-qualified component designed to maintain stable propellant pressure for spacecraft propulsion systems, utilizing hydrazine propellant.

Purpose	Pressure Stabilization
Year of release	2009
Design life	10 years
Lead time	12 months
Flight qualification of the product	Yes

price on request



GLAVKOSMOS

RD-120MS

RD-120MS is a modification of the RD-120 liquid rocket engine with afterburning of oxidizing gas, intended for the upper stages of promising Russian and foreign launch vehicles.

Thrust, earth / void, tf	- / 93
Specific impulse, earth / void	- / 351 s
Pressure in the combustion chamber, kgf/cm ²	181.6
Weight, dry / dipped	1450/1610 kg
Dimensions height / diameter	4714/2600 mm

price on request



GLAVKOSMOS

RD-171 M

The RD-171 M is a powerful liquid rocket engine designed for the first stage of the Zenit launch vehicle, utilizing oxygen and kerosene propellants with an afterburning oxidizing gas.

Purpose	Engines for the first stage of the Zenit launch vehicle.
Year of release	2004
Design life	8 renewable years
Lead time	22 months
Flight qualification of the product	Yes

price on request



GLAVKOSMOS

RD-180

The RD-180 is a liquid rocket engine with afterburning of oxidizing gas, designed for the first stage of the Atlas launch vehicle family, using oxygen and kerosene as propellants.

Purpose	Engines for the first stage of the Atlas launch vehicle family.
Year of release	1999
Design life	10 years
Lead time	18 months
Flight qualification of the product	Yes

price on request



GLAVKOSMOS

RD-181

The RD-181 is a liquid rocket engine with afterburning of oxidizing gas, designed for the first stage of the Antares launch vehicle, using oxygen and kerosene as propellants.

Purpose	Engines for the first stage of the advanced Antares launch vehicle.
Year of release	2015
Design life	11 years
Lead time	14 months
Flight qualification of the product	Yes

price on request



GLAVKOSMOS

Station Keeping Thruster Unit Based on Modified Thermocatalytic Thrusters

A thermocatalytic thruster unit designed for spacecraft station keeping, utilizing hydrazine propellant and featuring redundant components for reliability.

Purpose	Spacecraft station keeping
Year of release	2009
Design life	10 years
Lead time	12 months
Flight qualification of the product	No

price on request



GLAVKOSMOS

Station Keeping Thruster Unit Based on Thermocatalytic Thrusters

A thermocatalytic thruster unit designed for spacecraft station keeping, utilizing hydrazine propellant and featuring main and redundant thrusters, heaters, and temperature sensors

Purpose	Spacecraft station keeping.
Year of release	1999
Design life	7 years
Lead time	12 months
Flight qualification of the product	Yes

price on request



GLAVKOSMOS

Thermocatalytic Low Thruster

A hydrazine thermocatalytic low-thrust engine used for spacecraft orientation, attitude control, and station keeping.

Purpose	Spacecraft orientation, attitude control, and station keeping
Year of release	1994
Design life	10.5 years
Lead time	10 months
Flight qualification of the product	Yes

price on request



GLAVKOSMOS

Thermocatalytic Thrusters

Propellant - hydrazine. The main thruster component parts are: a decomposition chamber with a catalyst element and a nozzle, a propellant injection unit, two small-size solenoid va

Thrust	5.6 ... 1.0 (7.0 ... 4.0) N
Propellant inlet pressure	(883...204)/ (1030...780) kPa
Specific impulse in a continuous mode of operation	(220...214) s
Specific impulse in a pulse mode of operation	≥170 s
Life in terms of propellant throughput	20(150) kg

price on request



GLAVKOSMOS

TU1 Thruster Unit Based on Modified Thermocatalytic Low Thruster

The TU1 Thruster Unit is a thermocatalytic low thruster designed for spacecraft orientation and attitude control, using hydrazine as propellant.

Year of release	2013
Design life	5 years
Lead time	12 months
Flight qualification of the product	Yes
Possibility to adapt the product to customer requirements	Yes

price on request



GLAVKOSMOS

TU3 Thruster Unit Based on Modified Thermocatalytic Low Thrusters

The TU3 Thruster Unit is a propulsion system designed for spacecraft orientation and attitude control, utilizing three modified thermocatalytic low thrusters and hydrazine propellant

Purpose	Spacecraft orientation and attitude control.
Year of release	2013
Design life	5 years
Lead time	12 months
Flight qualification of the product	Yes

price on request



GLAVKOSMOS

Working Medium Tank MVSK

The Working Medium Tank MVSK is a monopropellant propulsion system designed for spacecraft, storing and feeding hydrazine to liquid propellant thrusters.

Purpose	Monopropellant propulsion system for spacecraft
Flight qualification of the product	Letter "0", flight use
Possibility to adapt the product to customer requirements	Yes
Propellant	Hydrazine
Operating pressure, not over	1.32 MPa

price on request

HyImpulse Technologies develops and manufactures hybrid rocket-powered launch vehicles and in-space mobility solutions, offering launch, satellite-as-a-service, and space-data-as-a-service.



HYIMPULSE TECHNOLOGIES

Hybrid Propulsion Systems

HyImpulse's hybrid motor family powers suborbital and orbital vehicles with lightweight composite casings, thrust vector control, and modular interfaces, providing liquid-like perf

Thrust (SL1 orbital launcher)	90 kN
Thrust (SR75 sounding rocket)	75 kN
Thrust (scalable architecture)	10 kN
Propellant	Nitrous oxide hybrid
Casing	Full composite

price on request

ISPTech

Green in-space propulsion systems for CubeSats to large spacecraft, based on 10+ years of DLR R&D.



ISPTECH

HIP_11 Propulsion System

Advanced green hypergolic H2O2 + ionic liquid multi-mode propulsion, up to 310 s Isp, 20-200 N.

Propellant	H2O2 (hydrogen peroxide) + ionic liquid fuel
Specific impulse (vacuum)	Up to 310 s
Propellant storage density (H2O2)	Up to 1,440 kg/m3
Propellant storage density (fuel)	Up to 1,100 kg/m3
Thrust variants	20 N and 200 N

price on request

Russian satellite manufacturer in Zheleznogorsk, Siberia; GLONASS-K/M navigation, Express GEO comms, Luch data relay, and Yamal satellites; 1,400+ spacecraft built.

ISS RESHETNEV

Attitude Control Propulsion Unit

The Attitude Control Propulsion Unit (ACPU) developed by ISS Reshetnev provides thruster-based attitude control and fine station-keeping for geostationary and medium-orbit satellit

price on request

VAST subsidiary developing the E-2 LOX/kerosene staged combustion rocket engine, designed for sale to small satellite launch vehicle developers.



LAUNCHER (VAST SUBSIDIARY)

E-2 liquid rocket engine

The E-2 is a LOX/Kerosene oxidizer-rich staged combustion engine designed for small launch vehicles, aiming to be the most efficient in its class.

Product	Orbiter orbital transfer vehicle
Parent	VAST
Service	Last-mile satellite delivery, hosted payloads

price on request



LAUNCHER (VAST SUBSIDIARY)

Launcher E-2 Liquid Rocket Engine

Launcher's E-2 liquid oxygen/RP-1 rocket engine — a 22,000 lbf thrust engine developed using advanced manufacturing for Launcher Light small orbital rocket (now part of VAST).

Engine	E-2 — LOX/RP-1 (liquid oxygen/kerosene), expander-bleed cycle
Thrust	22,000 lbf (sea level)
Manufacturing	3D-printed chamber and nozzle components
Test site	NASA Stennis Space Center + Launcher's own facility
Parent	VAST (acquired Launcher 2023; Haven-1 space station operator)

price on request

Japanese startup developing safe high-thrust hybrid propulsion systems using plastic as rocket fuel, founded by Hokkaido University hybrid propulsion experts.



LETARA
DARUMA Micro Hybrid Propulsion Unit

Modular hybrid propulsion unit using solid HDPE fuel and N2O oxidizer for last-mile orbital maneuvers of small satellites — accelerates a 10kg payload to 1,100 m/s, 3D-printed manu

Wet mass	30 kg
Performance (10kg payload)	Accelerates to 1,100 m/s
Performance (100kg payload)	Accelerates to 400 m/s
Performance (300kg payload)	Accelerates to 130 m/s
Fuel	HDPE (high-density polyethylene)

price on request

Liftero designs and manufactures mission-configured green chemical propulsion systems for satellites, with their BOOSTER product line proven in space.



LIFTERO
BOOSTER

Mission-configured, high-thrust green chemical propulsion system for satellites, enabling fast orbit transfer, collision avoidance, in-orbit servicing, and re-entry missions.

Orbit transfer time	1 to 3 days
Power consumption	7 W for 1N thrust
Propellants	N2O + C2H6 (self-pressurizing, green chemical propellant)
Flight heritage	RED5 mission, launched on SpaceX Transporter-13, March 2025 – first Polish propulsion syst

Development timeline	Concept to flight in 15 months
price on request	

Manastu Space

INDIA · 3 PRODUCTS

Indian deep-tech startup developing green hydrogen peroxide propulsion systems for small satellites, offering safe, non-toxic thrusters and propellant management solutions for LEO missions.



MANASTU SPACE

GP-LAM

GP-LAM is a compact, modular, and safe 300 N green thruster designed for upper stages of Launch Vehicles, Orbital Transfer Vehicles (OTVs), and GEO spacecraft, utilizing non-toxic

Thruster type	300 N thruster
Propellant	non-toxic MS289 green propellant
Features	Compact, modular and safe
Thermal management	Controlled Thermal Stress
Thrust	300 N

price on request



MANASTU SPACE

GP-LAM Liquid Apogee Module

300N modular green propulsion Liquid Apogee Module for launch vehicle upper stages, OTVs, and GEO spacecraft — multi-restart apogee raise, plane change, and compliant deorbit.

Spacecraft type	OTVs, launch vehicle upper stage, GEO stationary satellite
Nominal thrust	300 N (BOL)
Specific impulse	250 s (BOL)
Total impulse	150,000 Ns
Max continuous firing time	450 s

price on request



MANASTU SPACE

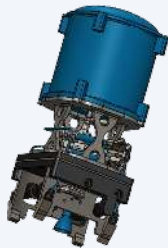
I-Booster Green Propulsion System

Green chemical propulsion system with 4x1N thrusters for 100-500kg satellites — hydrazine-free alternative delivered to India's DRDO for satellite maneuvering, December 2024.

Satellite weight	100-500 kg
Nominal thrust	0.5 N, 1 N
Specific impulse	~250 s (BOL)
Total impulse	20,000 N-s
Max continuous firing time	1000 s

price on request

MIPRONS designs and manufactures patented water-electrolysis propulsion systems for satellites, aiming for compact, high-performance, and sustainable solutions.



MIPRONS
ALBIREO Next-Generation Propulsion System

Next-generation water-electrolysis propulsion system integrating low- and high-thrust maneuver capability in one unit — for satellites, interplanetary drones, launcher stages, and

Propulsion technology	Water electrolysis (H2-O2)
Capability	Integrated low- and high-thrust maneuvers
Applications	Satellites, interplanetary drones, launcher stages, re-entry systems, carrier vehicles
Status	Next-generation / in development

price on request



MIPRONS
ALEXIUS Water-Electrolysis Propulsion System

Compact water-electrolysis propulsion system for nanosatellites and small satellites — 1.4 kg, >2.5 N thrust, >300s Isp, 5 international patents, TRL 7 target Q3 2025.

Mass	~1.4 kg (1.3-1.5 kg)
Volume	~0.7 L (95 x 95 x 70 mm)
CUBESAT units	0.6-0.7 U (excluding fuel)
Operating pressure	30 bar (H2-O2)
Thrust	> 2.5 N (at 30 bar), up to 3 N

price on request

Precision motion control and propulsion systems provider for space and defense applications.



MOOG SPACE DEFENSE GROUP
MONARC Monopropellant Thrusters

Moog's MONARC hydrazine monopropellant thruster family covering 1 N to 445 N thrust across six model series, with over 3,000 units delivered to commercial and government satellite

Monarc-1	Thrust 0.9–1 N; Isp 227–235 s; Mass 0.38 kg
Monarc-5	Thrust 4.5–5 N; Isp 226–230 s; Mass 0.49 kg
Monarc-22-6	Thrust 22 N; Isp 228–229.5 s; Mass 0.72 kg; 6-in nozzle
Monarc-22-12 lt/ht	Thrust 22 N; Isp 227–232 s; Mass 0.69 kg; 12-in nozzle

Monarc-90 lt Thrust 22–90 N; Isp 232 s;
Mass 1.12 kg; low-temperature
catalyst

price on request [datasheet](#)

MT Aerospace

GERMANY · 1995 · 1 PRODUCT

German aerospace components manufacturer producing satellite tanks, CFRP structures, and antenna dishes for European satellite programs.



MT AEROSPACE
Pressure Vessels and Cryogenic Tanks

MT Aerospace's lightweight composite overwrapped pressure vessels (COPVs) and cryogenic propellant tanks for launch vehicles — including Ariane 5/6 core stage tanks.

Products COPVs, cryogenic tanks
 (LOX/LH2), solid motor
 casings, payload fairings

Ariane 5/6 role EAP booster cases, LOX/LH2
 tanks, payload fairing
 (Ariane 6), P120C motor cases

Materials Carbon fiber composites,
 metallic structures

Customers ArianeGroup, Nammo, ESA,
 satellite manufacturers

HQ Augsburg, Bavaria, Germany

price on request

Nammo

NORWAY · 1998 · 1 PRODUCT

Nammo is an aerospace and defense company that designs and manufactures rocket motors for military and space applications, ammunition, and shoulder-launched munitions systems.



NAMMO
Apogee Engine Valve

The Apogee Engine Valve is a single-stage, redundant solenoid coil thruster flow control device specifically designed for propulsion system applications, compatible with various ch

Typical operating media Typical propulsion fluids

Maximum expected operating pressure	319 psia MEOP
Surge pressure	2,031 psi for 0.2 seconds
Proof pressure	609 psi
Burst pressure	1,189 psi

[price on request](#) [datasheet](#)

Northrop Grumman Space Systems

UNITED STATES · 1939 · 1 PRODUCT

Minotaur family, Pegasus XL, Antares (legacy); MLV co-development with Firefly.



NORTHROP GRUMMAN SPACE SYSTEMS

Propulsion Products and Services

Northrop Grumman offers a comprehensive range of propulsion products and services, including flight-proven systems, bipropellant and monopropellant thrusters, and gel propulsion sy

Mre-0.1 thrust	0.4 N @ 350 psia; Isp 216 sec; 0.5 kg; 180x38 mm
Mre-1.0 thrust	4.4 N; Isp 220 sec; 0.5 kg; 190x38 mm
Mre-4.0 thrust	18 N @ 600 psia; Isp 217 sec; 0.5 kg; 61x206 mm
Mre-5.0 thrust	22 N @ 400 psia; Isp 232 sec; 0.8 kg; 250x38 mm
Mre-15 thrust	86 N @ 400 psia; Isp 228 sec; 1.1 kg; 119x318 mm

[price on request](#) [datasheet](#)

OHB Sweden AB

SWEDEN · 2 PRODUCTS

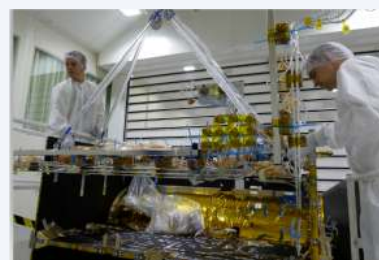
OHB Sweden builds small satellites, AOCS and propulsion systems. It is a provider of complete space missions, satellites, and spacecraft subsystems.



OHB SWEDEN AB

1-20N Monopropellant System

OHB Sweden's propulsion team has developed hydrazine-based systems for European primes, offering expertise across various thrust levels and suitable products.



OHB SWEDEN AB

10N Bipropellant System

OHB Sweden AB offers a 10N Bipropellant System, supported by extensive analysis capabilities and test facilities for calibration and campaign support.

price on request [datasheet](#)

price on request [datasheet](#)

Pangea Aerospace

SPAIN · 2018 · 6 PRODUCTS

European propulsion specialist building aerospike, in-space and staged-combustion rocket engines, including the world's first methalox aerospike engine.



PANGEA AEROSPACE

Arcos

Pangea's flagship methalox aerospike engine platform (second stage: 750 kN) -- the world's first tested LOX/methane aerospike, offering altitude-compensating efficiency for launch

Propellants	LOX / Methane (methalox)
Thrust (second stage)	750 kN
Cycle	Gas generator (open cycle)
Nozzle	Aerospike -- altitude-compensating, efficient from sea level to vacuum
Combustion chamber	Modular, deep-throttleable, bi-material additively manufactured

price on request



PANGEA AEROSPACE

Cryox

30 kN LOX/methane kick-stage engine with an electric-pump feed cycle, deep throttling (100% to 10%) and multiple restart capability for orbital insertion and precision docking.

Propellants	LOX / Methane (methalox)
Thrust	30 kN
Cycle	Advanced electric-pump (e-pump) cycle
Throttle range	100% down to 10%
Restart capability	Multiple restarts, reignitable

price on request



PANGEA AEROSPACE

Kronos

Full-flow staged combustion methalox engine in development, intended to be Europe's first FFSC engine and the most powerful ever conceived on the continent, built for heavy and sup

Propellants	LOX / Methane (methalox)
Cycle	Full-Flow Staged Combustion (FFSC)
Thrust	In development; ESA study targets over 2,000 kN (2 MN)
Thrust class	Over 100 tons (approx. 1,000 kN) for heavy-lift/deep-space missions
Manufacturing	Bi-material additive manufacturing

price on request



PANGEA AEROSPACE

Nereus 20 B

Bipropellant in-space thruster (20 N) balancing efficiency and versatility with green, storable propellants, capable of operating in monopropellant mode.

Propellant type	Bipropellant (also operable in monopropellant mode)
Propellants	H2O2 / Jet A
Thrust	20 N
Manufacturing process	LPBF-qualified additive manufacturing, millimetric tolerances
Compliance	REACH compliant, ITAR-free

price on request



PANGEA AEROSPACE

Nereus 20 M

Monopropellant in-space thruster (5-22 N) running on green, storable hydrogen peroxide (H2O2) for satellite station-keeping, attitude control and controlled deorbiting.

Propellant type	Monopropellant
Propellant	H2O2 (hydrogen peroxide)
Thrust	5-22 N
Manufacturing process	LPBF additive manufacturing, millimetric tolerances
Compliance	REACH compliant, ITAR-free

price on request



PANGEA AEROSPACE

Nereus 200

Higher-thrust extension of the Nereus in-space bipropellant family (100-240 N), aimed at orbital transfer vehicles, lunar landers and high-velocity defense platforms. Coming soon.

Propellant type	Bipropellant
Propellants	H2O2 / Jet A
Thrust	100-240 N
Status	Coming soon
Compliance	REACH compliant, ITAR-free

price on request

American propulsion company developing high-performance green propellant rocket engines for commercial and government launch vehicles and spacecraft.



PARABILIS SPACE TECHNOLOGIES
H2O2/HTPB Hybrid Upper Stage

High-performance hydrogen peroxide / HTPB fueled hybrid rocket upper stage for small launch vehicles.

Propellants	H2O2 (hydrogen peroxide) / HTPB
Application	Small launch vehicle upper stage
Ignition	Custom pyrotechnic or spark ignition hardware
Throttle	Variable-throttle demonstrated
Tvc	Liquid injection thrust vector control (LITVC)

price on request



PARABILIS SPACE TECHNOLOGIES
LOx/Methane RCS Thruster

Monolithic metallic additively manufactured liquid oxygen / methane reaction control system (RCS) thruster.

Propellants	LOx (liquid oxygen) / CH4 (methane)
Application	Reaction control system (RCS)
Manufacturing	Monolithic metallic additive manufacturing (3D-printed)
Application target	Spacecraft attitude control, deep-space architectures

price on request



PARABILIS SPACE TECHNOLOGIES

SmallSat Hybrid Propulsion Module

Custom hybrid solid-liquid propulsion system solutions for CubeSats through ESPA Grande-class satellites, designed and integrated in-house.

Satellite class	CubeSat through ESPA Grande
Technologies available	Solar electric, liquid monopropellant, liquid bipropellant, hybrid solid-liquid
Cleanroom	Class 10,000 integration and test cleanroom
Test facility	Dedicated propulsion test site, Ramona CA, up to 5,000 lbf
Delivery	Custom design, procurement, integration, testing, and post-delivery support

price on request

Promin Aerospace

UKRAINE · 2021 · 1 PRODUCT

Ukrainian small-launch startup developing Promin 1 (Zaarbird), an ultra-light autophagic rocket that burns its own solid-fuel airframe to orbit pico- and nanosatellites.

PROMIN AEROSPACE

Prometheus-1 Small Liquid Rocket Engine

Promin Aerospace's Prometheus-1 — a Ukrainian-developed liquid propellant rocket engine for small orbital launch vehicles and sounding rockets.

Engine type	Liquid propellant rocket engine (small class)
Propellants	LOX/Kerosene or Earth-storable bipropellants
Application	Small orbital launch vehicles, upper stages, sounding rockets
Flight heritage	Ukrainian rocket propulsion engineering (SDO Yuzhnoye, Yuzhmash lineage)
Company	Promin Aerospace, Ukraine (private, post-2021 space law)

price on request

Israeli defence company Rafael's space division; EO satellite payloads, ADCS, propulsion, and communications systems for Israel's national defence satellite and intelligence programmes.



RAFAEL ADVANCED DEFENSE SYSTEMS - SPACE DIVISION 1N Monopropellant Hydrazine Thruster

The Rafael 1N Monopropellant Hydrazine Thruster generates the required thrust for maneuvering satellites by means of a hot gas jet created by hydrazine decomposition and expansion

price on request



RAFAEL ADVANCED DEFENSE SYSTEMS - SPACE DIVISION 200N Monopropellant Hydrazine Thruster

The Rafael 200N Monopropellant Hydrazine Thruster is a high-thrust space propulsion unit designed for integration into Roll Attitude Control System (RACS) clusters for satellite la

price on request



RAFAEL ADVANCED DEFENSE SYSTEMS - SPACE DIVISION 25N Monopropellant Hydrazine Thruster

The Rafael 25N Monopropellant Hydrazine Thruster is designed for high-thrust satellite maneuvers, providing 9.5 to 28 N of steady-state thrust across its operational feed pressure

price on request



RAFAEL ADVANCED DEFENSE SYSTEMS - SPACE DIVISION 5N Monopropellant Hydrazine Thruster

The Rafael 5N Monopropellant Hydrazine Thruster is designed for satellite attitude control and orbit correction maneuvers. It produces steady-state thrust from 1.8 N at 5.5 bar to

price on request

RAFAEL ADVANCED DEFENSE SYSTEMS - SPACE DIVISION PEPT-230 Diaphragm Propellant Tank

The PEPT-230 (Positive Expulsion Propellant Tank) is a spherical titanium propellant tank with 6 liters nominal volume designed for hydrazine monopropellant propulsion systems. Pos

price on request

RAFAEL ADVANCED DEFENSE SYSTEMS - SPACE DIVISION PEPT-260 Diaphragm Propellant Tank

The PEPT-260 is a spherical titanium propellant tank with 9.3 liters nominal volume for hydrazine monopropellant propulsion systems. It uses an EPN-40 silica-free EPDM diaphragm fo

price on request

RAFAEL ADVANCED DEFENSE SYSTEMS - SPACE DIVISION PEPT-420N Diaphragm Propellant Tank

The PEPT-420N is a large-volume spherical titanium propellant tank with 37.5 liters nominal volume and 30 kg maximum hydrazine capacity. It is one of Rafael's most heritage-r

price on request

Space Pioneer (Tianbing Technology)

Chinese commercial launch company and developer of the Tianlong rocket family, the first Chinese private firm to reach orbit with a liquid-propellant

rocket.



SPACE PIONEER (TIANBING TECHNOLOGY)
TH-11

The TH-11 is an oxygen-rich staged combustion high-performance engine, using liquid oxygen/kerosene propellant, suitable for the upper stage and first stage of medium-sized liquid

Propellant	Liquid Oxygen + Kerosene
Vacuum thrust	30 t
Vacuum specific impulse	345 s
Thrust-to-weight ratio	130
Number of starts	2 times

price on request



SPACE PIONEER (TIANBING TECHNOLOGY)
TH-12

The TH-12 is a hundred-ton class liquid oxygen/kerosene engine designed for reusable medium and large liquid launch vehicles.

Propellant	Liquid Oxygen + Kerosene
Sea-level thrust	95 t
Sea-level specific impulse	285 s
Thrust-to-weight ratio	163
Number of starts	4 times

price on request



SPACE PIONEER (TIANBING TECHNOLOGY)
TH-31

The TH-31 is a space engine designed for spacecraft orbit changes and attitude control, utilizing room-temperature liquid propellants.

Type	Bipropellant pressure-fed
Propellant	Dinitrogen tetroxide/Monomethylhydrazine (NTO/MMH)
Vacuum thrust	3000 N + 8*150 N
System	Constant pressure extrusion system
Number of thrust chambers	1 + 8/12

price on request

Affordable hardware development for miniaturized aerospace systems, with a proven flight-heritage track record in nanosatellite power, propulsion and RF tracking subsystems.



STELLAR EXPLORATION, INC.	
Nanosatellite Mono & Bipropellant Propulsion Thruster	
Miniaturized hypergolic bipropellant thruster delivering 3 N thrust at 285 s Isp, developed for a NASA-funded deep-space nanosatellite mission.	
Thrust	3 N
Specific impulse	285 sec
Propellant feed	Gear pumps for precise propellant metering, low-pressure tank design
Propellant type	Hypergolic bipropellant; monopropellant variants also available
Flight heritage	NASA CAPSTONE (12U lunar mission), EchoStar EG-3 (small-satellite delta-V record)

[price on request](#) [datasheet](#)

T4i - Technology for Propulsion and Innovation

Cold gas, monopropellant, and electric (iodine) propulsion systems for small satellites, deployers, and orbital transfer vehicles.



T4I - TECHNOLOGY FOR PROPULSION AND INNOVATION	
ALPHARD Monopropellant Family	
Family of High Test Peroxide (HTP) monopropellant thrusters (ALPHARD-10, -10-HP, -20, -20-HP, -200) for delta-v and RCS on small satellites, deployers, and orbital transfer vehicle	
Propellant (Family Overview)	HTP 90 w% (customizable up to 95 w%)
Thrust range [n] - alphard-10	5.3 – 12.7 N
Thrust range [n] - alphard-10-hp	5.3 – 19.7 N
Thrust range [n] - alphard-20	10 – 22.6 N

Thrust range [n] - alphard-20-hp 10 – 34 N

[price on request](#)

Tesseract

UNITED STATES · 2017 · 3 PRODUCTS

US green spacecraft propulsion manufacturer; off-the-shelf thrusters, multi-thruster modules, and complete turn-key propulsion systems using low-toxicity propellants.



TESSERACT

Lyra 1

Lyra 1 is a bipropellant thruster designed for SmallSat propulsion subsystems, offered by Tesseract Space.

Name	Lyra 1
Vendor	Tesseract Space
Subsystem	Propulsion Subsystem
Component type	Bipropellant Thruster
Form factor	SmallSat

[price on request](#) [datasheet](#)



TESSERACT

Lyra 22

The Lyra 22 is a bipropellant thruster designed for SmallSat propulsion subsystems, offered by Tesseract Space.

Name	Lyra 22
Vendor	Tesseract Space
Subsystem	Propulsion Subsystem
Component type	Bipropellant Thruster
Form factor	SmallSat

[price on request](#) [datasheet](#)



TESSERACT

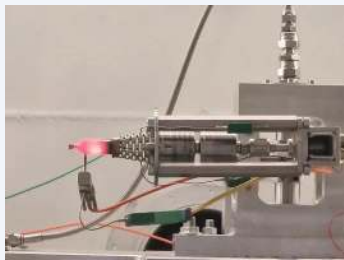
Rigel 500

The Rigel 500 is a bipropellant thruster offered by Tesseract Space, designed for SmallSat propulsion subsystems.

Name	Rigel 500
Vendor	Tesseract Space
Subsystem	Propulsion Subsystem
Component type	Bipropellant Thruster
Form factor	SmallSat

[price on request](#) [datasheet](#)

Polish green space propulsion company in Warsaw; hydrogen peroxide propellants and catalysts as eco-friendly hydrazine alternatives for satellite propulsion systems.



THALIANA SPACE
1N HTP Monopropellant Thruster

1 N monopropellant thruster running on 98% high-test peroxide, developed at Łukasiewicz - ILOT and commercially produced by Thaliana Space under license for satellite ACS and deorb

Propellant	98% HTP (monopropellant)
Nominal thrust	1 N
Type	Catalytic monopropellant thruster
Licensor	Łukasiewicz Research Network - Institute of Aviation
License signed	February-March 2025

price on request

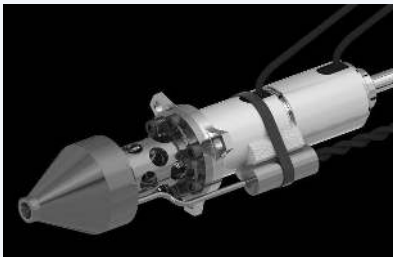


THALIANA SPACE
420N HTP Bipropellant Kick-Stage Engine

420 N-class bipropellant rocket engine using 98% hydrogen peroxide as oxidizer, developed under ESA's GRACE 1/2 programs and manufactured by Thaliana Space for MaiaSpace's Colibri

Nominal thrust	420 N (per engine)
Oxidizer	98% hydrogen peroxide (HTP)
Type	Bipropellant liquid rocket engine
Application	Kick-stage / orbital transfer vehicle (OTV) / launcher upper stage
Flight heritage	ESA GRACE 1 & GRACE 2 programs, Łukasiewicz - ILOT

price on request



THALIANA SPACE
Green Propulsion System (4x1N HTP Monopropellant Module)

Blowdown monopropellant propulsion system using 98% HTP with four 1 N thrusters for LEO small-satellite orbital maneuvers, attitude control, and end-of-life deorbit.

Propellant	98% HTP
Wet mass	< 25 kg
Dry mass	< 12 kg
Type	Blowdown monopropellant
Total impulse	14000 Ns

price on request

UK electric propulsion company; Hall-effect thrusters using water vapour or gaseous oxygen; electrolysis propulsion and microwave electrothermal thrusters; green propellant alternatives.



URA THRUSTERS
URA ICE Thruster (Electrolysis Chip Thruster)

MEMS-manufactured propulsion system combining water electrolysis and hydrogen-oxygen catalytic combustion in a chip-based thruster, scalable from CubeSats to large satellites.

Model	ICE-10
Thrust	10 mN
Specific impulse (Isp)	310 s
Power	5 / 25-800 W
Dimensions	<4 U

price on request

US manufacturer of precision fluid control components and integrated propulsion systems for spacecraft, with 70+ years of heritage. Products include micro propulsion systems, valves, pressure regulators, and CubeSat propulsion modules.



VACCO INDUSTRIES
Integrated Propulsion System (IPS)

VACCO's Integrated Propulsion System (IPS) is a complete, bolt-on propulsion module for SmallSats, providing attitude control and delta-V with a total impulse of 12,000 N-sec.

Total impulse	12,000 N-sec
Thruster type	1 N LMP-103S green monopropellant thrusters
Number of thrusters	Four
Net axial thrust	3.97 N
Thruster flight heritage	56 units successfully flown since 2010

price on request [datasheet](#)

Argentine space engineering company (Buenos Aires, founded 2007) and prime contractor to CONAE for the Tronador II launch vehicle programme, satellite avionics, propulsion, and ground-segment systems.



VENG S.A.

MOTOR MT-B

The MT-B is a bipropellant liquid rocket engine with a single regeneratively cooled thrust chamber, designed for the second stage of the Tronador TII-250 launch vehicle.

Uso	Segunda etapa (óptima) o clúster de primera etapa
Empuje en vac	4280 Kgf
Propelentes	LOX/RP1
Impulso específico en vac	330 S
Sistema de alimentación	CICLO GENERADOR DE GASES

price on request

datasheet



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Empuje en vac	4280 Kgf
Propelentes	LOX/RP1
Impulso específico en vac	330 S
Sistema de alimentación	CICLO GENERADOR DE GASES

price on request

datasheet

Yuzhnoye State Design Office (KB Pivdenne) is Ukraine's premier rocket and space engineering organization, providing full-cycle development of launch vehicles, spacecraft, and propulsion systems. Founded in 1954 and headquartered in Dnipro,



YUZHNOYE DESIGN BUREAU

Green Monopropellant Propulsion System

The Green Monopropellant Propulsion System developed by Yuzhnoye SDO is intended for generating thrust impulse bits to extend spacecraft lifetime, particularly for CubeSat-class na

Working medium	HAN-based monopropellant
Pressurant	Isobutane
Total thrust impulse	0.32 kN*s
Thrust	0.153 N
Monopropellant mass	0.15 kg

price on request

Manufacturers in this sector

AADYAH Aerospace

India · 1 product

Aerospace company supporting space exploration missions; partners with ISRO, Skyroot, Orbex, Bellatrix, and Latitude on lunar and Mars programmes.

Applied Ion Systems

United States · 1 product

Applied Ion Systems develops and tests micro End Hall Thrusters for electric propulsion.

Bellatrix Aerospace

India · 2015 · 1 product

Indian in-space propulsion company developing electric and green chemical thrusters and orbital transfer vehicles for missions from nanosatellites to GEO platforms.

Blue Orbit Space Systems

Germany · 1 product

Blue Orbit Space Systems is a German deep-tech startup based in Bremen that develops electric propulsion systems for small satellites and plasma-based solutions for industrial applications.

Bradford Space

Sweden · 2000 · 11 products

Swedish green propulsion pioneer; HPGP / LMP-103S thrusters using ADN propellant with 12% higher Isp than hydrazine; Bradford ENOVIA group.

CNNC Space (China National Nuclear Corp Space)

China · 1955 · 1 product

Chinese state-owned nuclear enterprise founded 1955 in Beijing overseeing civilian nuclear power, fuel production, and uranium mining; uses satellite remote sensing for exploration and resea

Dawn Aerospace

New Zealand · 2018 · 3 products

New Zealand and Netherlands aerospace company developing the Mk-II Aurora reusable spaceplane and refuellable in-space propulsion systems for satellite missions.

Digital Solid State Propulsion

United States · 2005 · 4 products

Developer and producer of safe, electrically-throttled 'green' energetic materials and propellants for defense, space, and commercial markets.

Aerojet Rocketdyne (L3Harris)

United States · 1915 · 11 products

Major US propulsion company (now part of L3Harris); RL10, RS-25/SLS engines, satellite thrusters, and solid rocket motors; 75+ years heritage powering US launch vehicles.

Astro Mechanica

United States · 2024 · 1 product

US aerospace startup developing lightweight aviation jet engines using novel manufacturing techniques to dramatically reduce cost and weight.

Benchmark Space Systems

United States · 3 products

US propulsion company in Burlington, VT; 39 chemical and 19 electric systems launched; chemical, electric, and hybrid thrusters with full mission assurance.

Blue Origin

United States · 2000 · 1 product

Heavy-lift reusable launch — New Glenn; suborbital tourism & research — New Shepard.

Busek Co.

United States · 1985 · 2 products

Busek Co. Inc. designs, develops, and manufactures electric propulsion thrusters and related space hardware for military, government, and commercial satellites, with a focus on Hall, electro

CU Aerospace

United States · 2 products

Small satellite propulsion systems developer specializing in electric and chemical thrusters for CubeSats and small spacecraft.

DELTAV Space Technologies

Turkey · 2018 · 2 products

Turkish aerospace company developing hybrid rocket propulsion, cryogenic systems, composite structures, and in-space propulsion — with a sounding rocket exceeding 200 km altitude and a hybri

DREAM Aerospace

India · 2022 · 2 products

Indian space startup pioneering green propulsion systems for CubeSats and small satellites.

GATE Space

Austria · 1 product

Austrian manufacturer of high-thrust chemical propulsion systems for satellite mobility and orbit control.

Glavkosmos

Russia · 1985 · 24 products

Glavkosmos coordinates international human spaceflight projects, facilitates satellite launches, develops and supplies rocket components, and provides equipment for space crews.

HyImpulse Technologies

Germany · 2018 · 1 product

HyImpulse Technologies develops and manufactures hybrid rocket-powered launch vehicles and in-space mobility solutions, offering launch, satellite-as-a-service, and space-data-as-a-service.

ISPTech

Germany · 1 product

Green in-space propulsion systems for CubeSats to large spacecraft, based on 10+ years of DLR R&D.

ISS Reshetnev

Russia · 1959 · 1 product

Russian satellite manufacturer in Zheleznogorsk, Siberia; GLONASS-K/M navigation, Express GEO comms, Luch data relay, and Yamal satellites; 1,400+ spacecraft built.

Launcher (VAST subsidiary)

United States · 2017 · 2 products

VAST subsidiary developing the E-2 LOX/kerosene staged combustion rocket engine, designed for sale to small satellite launch vehicle developers.

Letara

Japan · 2020 · 1 product

Japanese startup developing safe high-thrust hybrid propulsion systems using plastic as rocket fuel, founded by Hokkaido University hybrid propulsion experts.

Liftero

Poland · 1 product

Liftero designs and manufactures mission-configured green chemical propulsion systems for satellites, with their BOOSTER product line proven in space.

Manastu Space

India · 3 products

Indian deep-tech startup developing green hydrogen peroxide propulsion systems for small satellites, offering safe, non-toxic thrusters and propellant management solutions for LEO missions.

MIPRONS

2019 · 2 products

MIPRONS designs and manufactures patented water-electrolysis propulsion systems for satellites, aiming for compact, high-performance, and sustainable solutions.

Moog Space Defense Group

United States · 1951 · 1 product

Precision motion control and propulsion systems provider for space and defense applications.

MT Aerospace

Germany · 1995 · 1 product

German aerospace components manufacturer producing satellite tanks, CFRP structures, and antenna dishes for European satellite programs.

Nammo

Norway · 1998 · 1 product

Nammo is an aerospace and defense company that designs and manufactures rocket motors for military and space applications, ammunition, and shoulder-launched munitions systems.

Northrop Grumman Space Systems

United States · 1939 · 1 product

Minotaur family, Pegasus XL, Antares (legacy); MLV co-development with Firefly.

OHB Sweden AB

Sweden · 2 products

OHB Sweden builds small satellites, AOCS and propulsion systems. It is a provider of complete space missions, satellites, and spacecraft subsystems.

Pangea Aerospace

Spain · 2018 · 6 products

European propulsion specialist building aerospike, in-space and staged-combustion rocket engines, including the world's first methalox aerospike engine.

Parabilis Space Technologies

United States · 2015 · 3 products

American propulsion company developing high-performance green propellant rocket engines for commercial and government launch vehicles and spacecraft.

Promin Aerospace

Ukraine · 2021 · 1 product

Ukrainian small-launch startup developing Promin 1 (Zaarbaird), an ultra-light autophagic rocket that burns its own solid-fuel airframe to orbit pico- and nanosatellites.

Rafael Advanced Defense Systems - Space Division

Israel · 7 products

Israeli defence company Rafael's space division; EO satellite payloads, ADCS, propulsion, and communications systems for Israel's national defence satellite and intelligence programmes.

Space Pioneer (Tianbing Technology)

China · 2019 · 3 products

Chinese commercial launch company and developer of the Tianlong rocket family, the first Chinese private firm to reach orbit with a liquid-propellant rocket.

Stellar Exploration, Inc.

United States · 1 product

Affordable hardware development for miniaturized aerospace systems, with a proven flight-heritage track record in nanosatellite power, propulsion and RF tracking subsystems.

T4i - Technology for Propulsion and Innovation

Italy · 2014 · 1 product

Cold gas, monopropellant, and electric (iodine) propulsion systems for small satellites, deployers, and orbital transfer vehicles.

Tesseract

United States · 2017 · 3 products

US green spacecraft propulsion manufacturer; off-the-shelf thrusters, multi-thruster modules, and complete turn-key propulsion systems using low-toxicity propellants.

Thaliana Space

Poland · 2022 · 3 products

Polish green space propulsion company in Warsaw; hydrogen peroxide propellants and catalysts as eco-friendly hydrazine alternatives for satellite propulsion systems.

URA Thrusters

United Kingdom · 2019 · 1 product

UK electric propulsion company; Hall-effect thrusters using water vapour or gaseous oxygen; electrolysis propulsion and microwave electrothermal thrusters; green propellant alternatives.

VACCO Industries

United States · 1954 · 1 product

US manufacturer of precision fluid control components and integrated propulsion systems for spacecraft, with 70+ years of heritage. Products include micro propulsion systems, valves, pressur

VENG S.A.

Argentina · 2007 · 2 products

Argentine space engineering company (Buenos Aires, founded 2007) and prime contractor to CONAE for the Tronador II launch vehicle programme, satellite avionics, propulsion, and ground-segmen

Yuzhnoye Design Bureau

Ukraine · 1954 · 1 product

Yuzhnoye State Design Office (KB Pivdenne) is Ukraine's premier rocket and space engineering organization, providing full-cycle development of launch vehicles, spacecraft, and propulsion sys

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