



December 19, 2025

To whom it may concern:

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Notice of Publication of Materials and Video Distribution
of “Space & Defense Solid Propellants Business Briefing” (Q&A Supplement)

We are pleased to announce that “Space & Defense Solid Propellants Business Briefing” video is now available, as detailed below.

The “Space & Defense Solid Propellants Business Briefing” was held via live streaming for institutional investors and securities analysts on December 16. In consideration of fair disclosure, the recording of the briefing is now available as an on-demand video on YouTube.

The briefing topics and presenters are as follows.

1. Carlit and Solid Propellants	pp.3–	Hajime Yamamoto, General Manager, Public Relations & IR Group
2. Progress Report on the Ammonium Perchlorate Production Expansion Plan	pp.6–	Fumio Ogawa, Executive Officer, President (Head) of Research & Development
3. Development Status of Solid Propellants for Space and Defense	pp.10–	Yoji Yamaguchi, Executive Officer, in charge of Research & Development
4. Q&A Session	pp.19–	• Yoji Yamaguchi, Executive Officer, in charge of Research & Development • Fumio Ogawa, Executive Officer, President (Head) of Research & Development • Hajime Yamamoto, General Manager, Public Relations & IR Group

Please view the video at the URL below.

<https://youtu.be/56d2ryqgw0>

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■ Agenda

1. Carlit and Solid Propellants
2. Progress Report on the Ammonium Perchlorate Production Expansion Plan
3. Development Status of Solid Propellants for Space and Defense
4. Q&A

■ Presenters

- Yoji Yamaguchi, Executive Officer, in charge of Research & Development
- Fumio Ogawa, Executive Officer, President (Head) of Research & Development
- Hajime Yamamoto, General Manager, Public Relations & IR Group

Carlit and Solid Propellants

Carlit's history

1) Situation in the early 1900s

The demand for large volumes of industrial explosives increased due to limestone quarrying for cement raw material. At that time, dynamite (primarily oil-based) was mainly imported from overseas.

2) Societal challenge at the time

Could industrial explosives be manufactured domestically in Japan without relying on oil-based formulations?

3) Carlit's challenge

Carlit began the manufacture and sale of Japan's first industrial explosive using salt as the primary raw material — the Carlit explosive※ (1918).

(※Carlit explosives are no longer sold.)

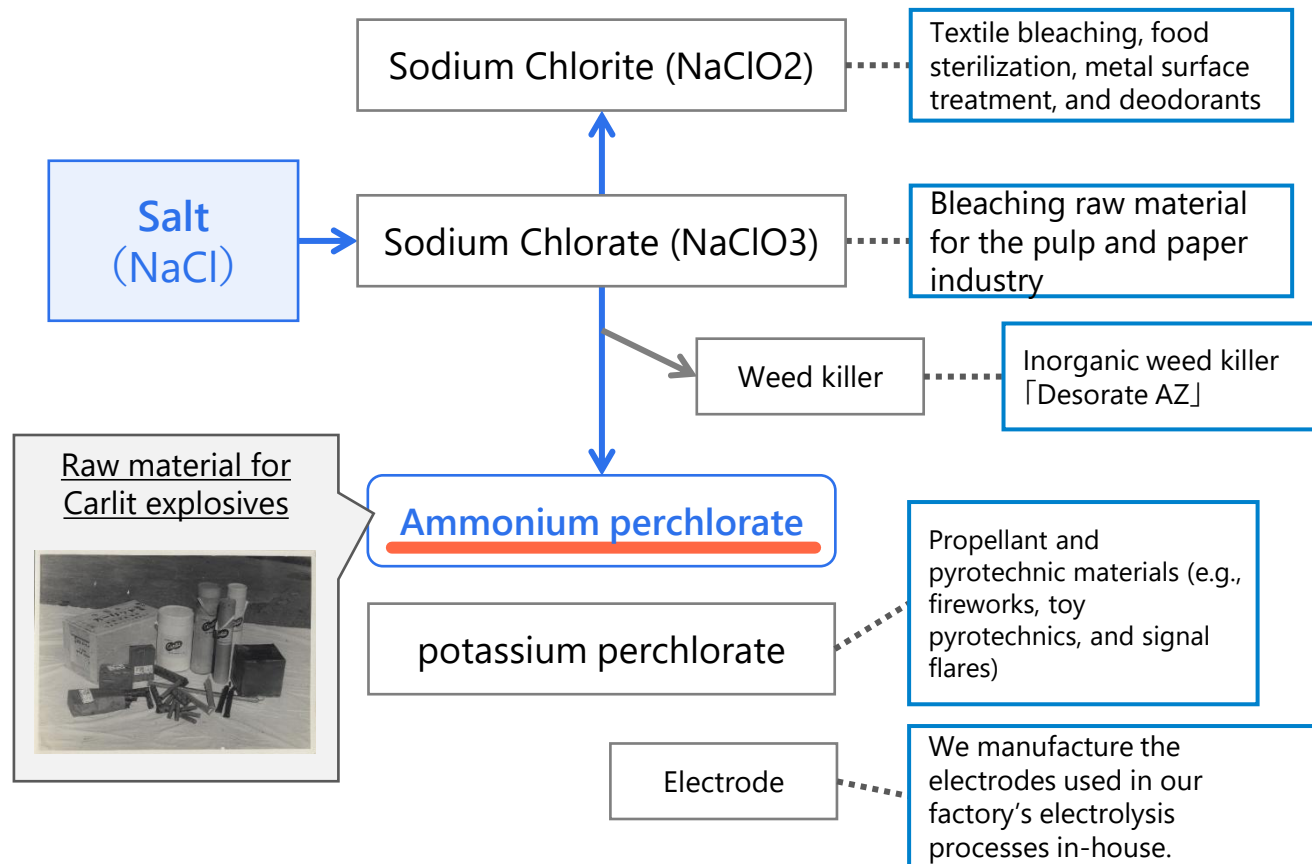
- ➡
- Achieved stable supply of low-cost explosives
 - Contributed to Japan's industrial growth



Soichiro Asano,
founder
(1848-1930)

From "Salt" to propellant feedstock

【Product lineup derived from salt as a starting material: electrolysis and electrolytic oxidation–related products】



Ammonium perchlorate (solid propellant),
the topic of today's presentation,
embodies the core technologies Carlit has
developed since its founding.

Electrolysis technology for
production

Handling technology for explosives
and hazardous materials

All of the above fall under the Chemical field within the Chemicals segment
in our financial statements.

Progress report on the ammonium perchlorate production expansion plan



Ammonium perchlorate

【Ammonium perchlorate (NH₄ClO₄)】



Properties

- Appearance:** White crystalline powder
- Hazard Classification:** Oxidizing solid (Class 1 hazardous material)
- Properties:** Burns vigorously when mixed with combustible materials; can ignite or detonate under strong heating
- Manufacturing Site:** Carlit Co., Ltd., Gunma Plant (Shibukawa City, Gunma Prefecture)



【Excerpted from Medium-term Management Plan “Challenge2027”】

Business Strengths	Key Markets and Positions
<ul style="list-style-type: none">• The only domestic industrial manufacturing facility, manufacturing know-how cultivated since its founding Expertise handling know-how for explosives and hazardous materials• Use of electricity from hydroelectric power plant (Koto Hydroelectric Power Plant)• In-house development and manufacturing of electrodes exclusively for ammonium perchlorate production	<ul style="list-style-type: none">• Space industry applications...Solid propellants for H3 rocket and Epsilon rocket (sold as ammonium perchlorate) Solid propellants for private rocket (KAICOS)• Defense applications...Solid propellants for defense-related products• The only industrial producer of ammonium perchlorate in Japan• Cannot be sold overseas. Domestic consumption only (End products may be exported)



Manufacturing process and strengths of ammonium perchlorate

Carlit Co., Ltd.

【Manufacturing process】

1) Electrolysis process

Chlorate production by electrolysis/electrolytic oxidation of sodium chloride

Key strengths:

1. Ownership of an in-house hydroelectric power plant. (Koto Hydropower Plant)
2. In-house manufacture of electrodes for electrolysis.

2) Crystallization Reaction process

Convert sodium perchlorate to ammonium perchlorate and crystallize

Key strengths:

Precise control of particle shape and particle size (granularity)

3) Drying process

Dry the crystallized ammonium perchlorate

Key strength:

A drying process that does not crush the crystals (preserves crystal integrity)

4) Sieving process etc.

Sieve the dried ammonium perchlorate and adjust particle-size and other quality attributes

Key strength:

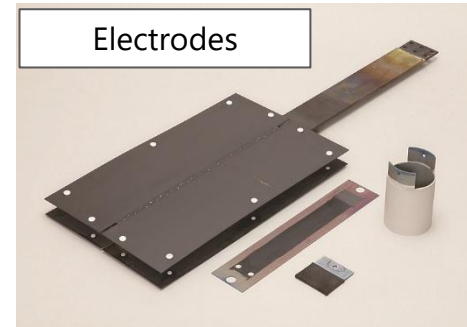
precise control of particle shape and particle size (granulometry)

Ammonium perchlorate is completed.

Koto Hydropower Plant



Electrodes





Progress of the ammonium perchlorate production expansion plan

Carlit Co., Ltd.

Processies	FY2024	FY2025	FY2026	FY2027	FY2028		
Electrolysis	Phase 1 (Complete)		Phase 3 (WIP)				
Crystallization Reaction	Phase 1 (Complete)		Operations scheduled to start in April 2027.				
Drying		Phase 2 (WIP)					
Sieving etc.		Phase 2 (WIP)					

As of 2023, maximum producti

Total investment

Phase 1 : JPY 500 million

Phase 2 : JPY 500 million

Phase 3 : JPY 1,500 million



Under-construction photos



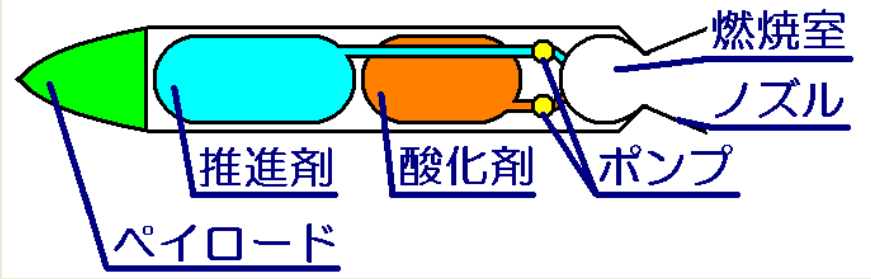
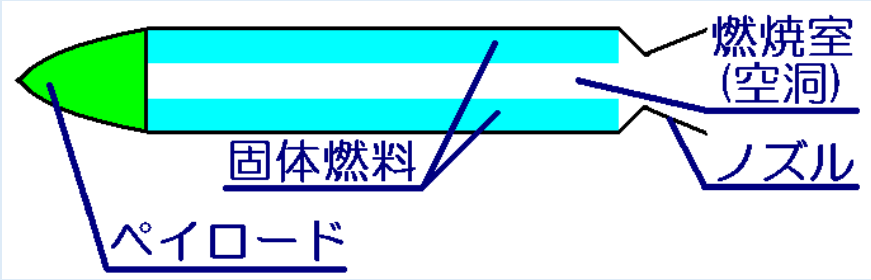
As of 2023, maximum production capacity will be increased to 2–3 times the previous level.

Development Status of Solid Propellants for Space and Defense



Types of solid propellants

Carlit Co., Ltd.

Category	Structure	Good point	Bad point
Liquid propellants		<ul style="list-style-type: none">• High specific impulse (excellent fuel efficiency)• Thrust can be throttled/adjusted• Good structural efficiency for large-scale applications	<ul style="list-style-type: none">• Expensive due to complex structures• Poor structural efficiency for small-scale systems• Difficult to store safely (issues with corrosion and toxicity)• Low operational readiness due to on-site fueling prior to launch
	Practical example : H3 Launch Vehicle		
Solid propellants		<ul style="list-style-type: none">• Simple structure, high reliability, and low cost• Good structural efficiency for small-scale systems• High operational readiness due to being storable and launch-ready (can be launched immediately when needed — suitable for guided missiles)	<ul style="list-style-type: none">• Thrust adjustment is difficult• Cannot be reignited (no restart capability)• Poor structural efficiency for large-scale systems
	Practical example : H3 Launch Vehicle Solid Rocket Booster、Epsilon Launch Vehicle Sounding rocket、Guided missile		

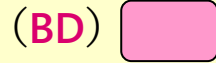


【Solid propellants developed by Carlit】

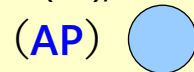
Composite Solid Propellant ➡ Solid propellants primarily composed of ammonium perchlorate (AP) manufactured by Carlit
Note: Carlit is the sole manufacturer of AP in Japan.

What is a composite solid propellant?

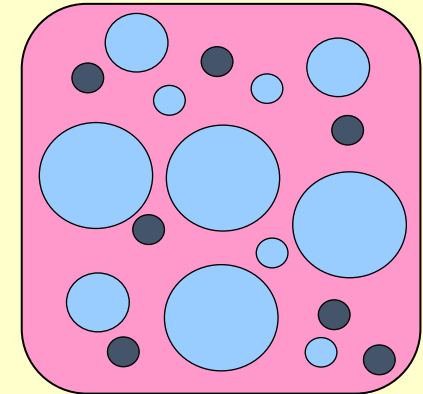
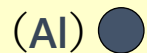
Binder: a resin that generates gas during combustion and acts as fuel (approximately 10%)



Oxidizer: Ammonium perchlorate (AP), which supplies the oxygen required for combustion (approximately 70%).



Metal fuel: Aluminum particles that increase the combustion temperature (approximately 20).



【Schematic diagram】

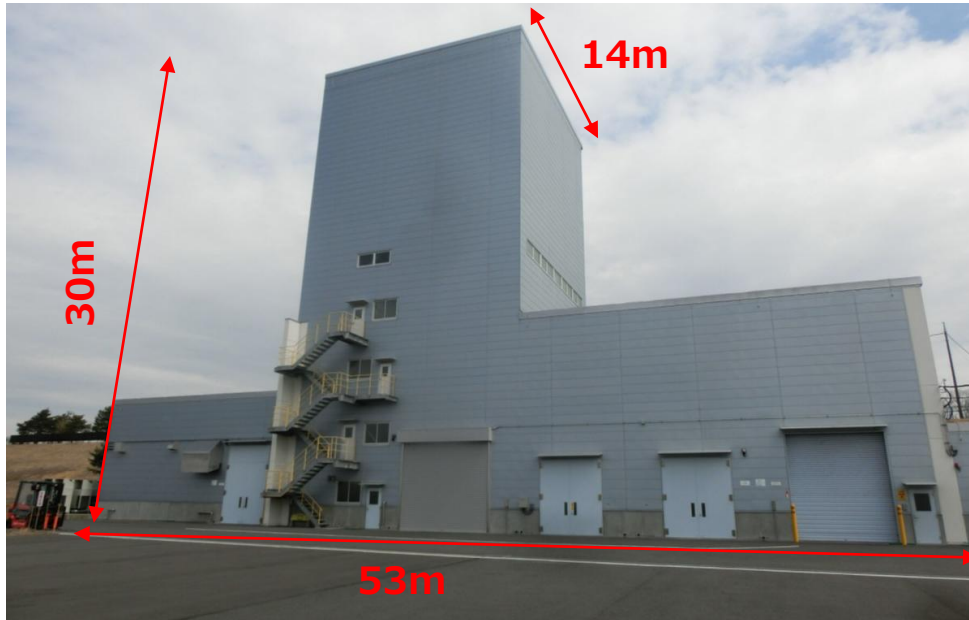
It falls under the category of explosives as defined by the Explosives Control Act,
and therefore has the distinctive characteristic that it can only be manufactured by licensed explosives manufacturers.



Introduction to Solid Rocket Propellant Manufacturing Facilities

Carlit Co., Ltd.

【Akagi Plant – Composite Solid Propellant Pilot Production Facility】

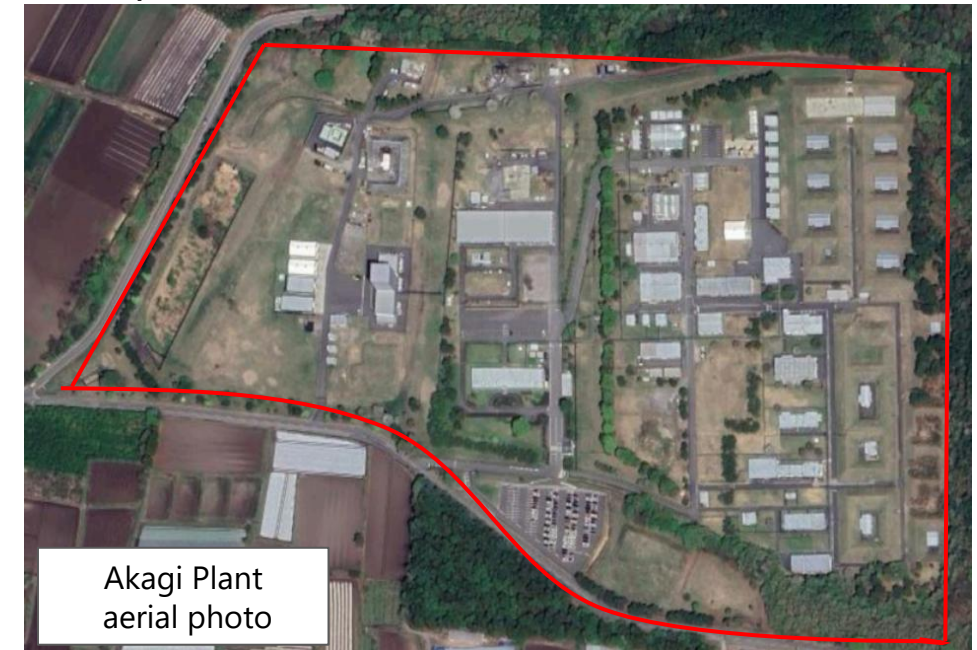


Maximum batch size: 15,000 kg

Installed equipment: Large mixer, large vacuum chamber (ϕ 3.5 m \times L 10 m), 30 t overhead crane

Track record: Full-scale production of solid propellants for space and defense rockets, which are used for test flights and ground firing tests.

【Akagi Plant – Defense Solid Propellant Production Plant (under construction)】



- Capital investment has commenced with the aim of completing construction and starting production in FY2029.
- A new plant for manufacturing defense solid propellants is being constructed on the premises of the Akagi Plant.
- As of December 2025, site preparation work and equipment design have begun.
- The capital investment is scheduled to be recovered through initial procurement costs funded by the government.



Introduction to Solid Propellant Testing Facilities

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【Akagi Plant – Composite Solid Propellant Evaluation Facilities】

- Combustion test facility: Evaluates combustion characteristics of solid propellants, such as thrust and burning rate.
- Tensile testing machine: Evaluates the mechanical strength of propellants to verify that they can withstand combustion pressure and other loads.
- X-ray inspection system: Evaluates internal defects in solid propellants in a non-destructive manner.

⇒ These facilities are used for inspecting manufactured products and for customizing solid propellants to meet the requirements of each manufacturer.

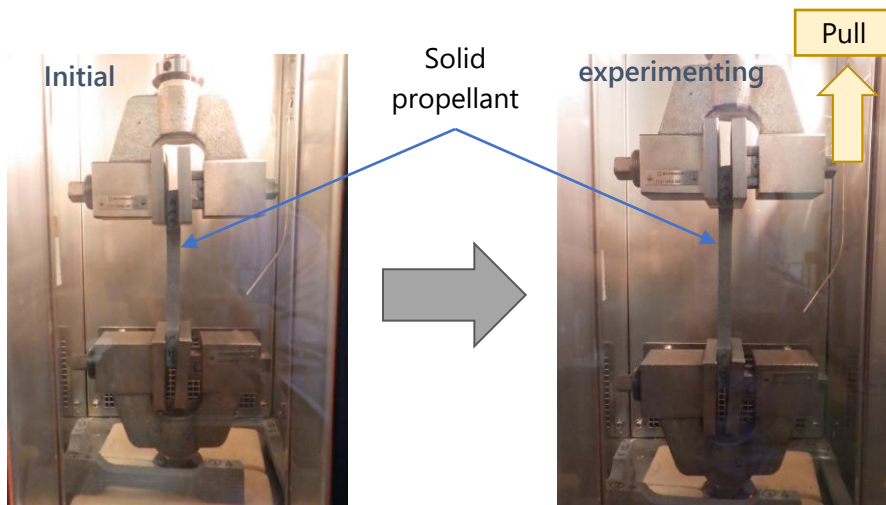
Combustion test facility

Propellant quantity testable at the laboratory: From 2-3kg up to 10 kg.

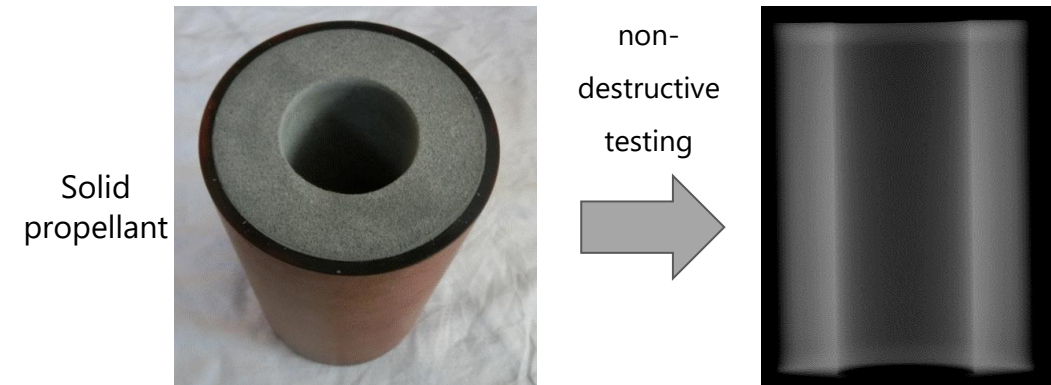


Solid propellant combustion test

Tensile testing machine



X-ray inspection system





Market for solid propellants for space applications

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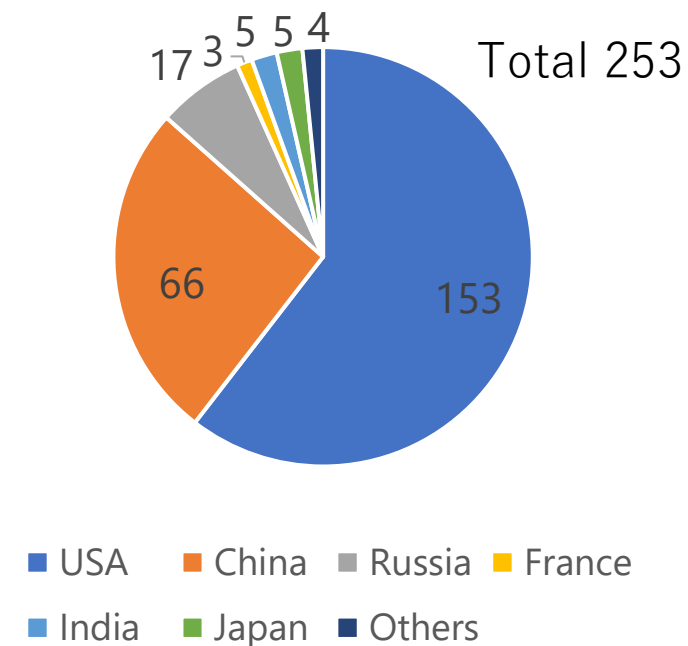
◆ Current status of space launch vehicles

While global demand for launch vehicles is rapidly increasing, government satellites in Japan are launched by JAXA's core rockets. However, the number of launches conducted in Japan remains at around five per year (see the figure on the right).

◆ Market for space launch vehicles

To overcome this situation, the Cabinet Office plans to enhance the transport capacity of both core rockets and private-sector rockets, and to recapture satellite launch demand that is currently flowing overseas by bringing it back to the domestic market.

【Number of rocket launches FY2025】



Source : 「宇宙技術戦略（令和6年3月28日宇宙政策委員会）」

*** With the expected increase in the number of rocket launches in Japan, the domestic market for solid propellants for space applications is also projected to expand rapidly.**

Market for defense solid propellants

◆ Current status of defense spending





Japan has a plan to increase defense spending over the five years from fiscal 2023 to fiscal 2027. The total amount required to achieve the targeted level of defense capability development is estimated to be around 43 trillion yen. In the final year, fiscal 2027, the scale of annual defense expenditures, including related costs, is planned to be raised to 2.0% of GDP. (Japan's GDP in 2024: 609.2887 trillion yen)

◆ Market for defense rockets




Amid discussions on strengthening defense spending, the portion of the defense budget allocated to defense rockets (various guided missiles) is estimated, under the Ministry of Defense's Defense Buildup Program, to reach several trillion yen. Furthermore, in recent years, at the request of the United States, Japan has been considering raising its defense spending to 3.5%, and potentially up to 5%, of GDP. As a result, demand and the market for defense rockets (various guided missiles) are tending to expand significantly.

*** With the planned increase in defense spending, the market for defense solid propellants is also expected to expand rapidly.**

Integrated Air and Missile Defense (IAMD) Capability

統合防空ミサイル防衛能力	
必要性	○ 現在、28個のPAC-3部隊と8隻のイージス艦を全国に配置し、一定の体制を整備。 ○ 他方、我が国周辺国の弾道・巡航ミサイルの性能向上や増加に加え、極超音速滑空兵器(HGV)や小型無人機などの新たな脅威により、経空脅威は多様化・複雑化。我が国は、飽和攻撃といった量的側面、新たな経空脅威の出現という質的側面の両方の脅威に対処しつつ、撃ち漏らしや重複射撃を防止し、効率的対処を追求する必要がある。
整備の方向性	2027年度までに 既存アセットの能力向上により極超音速滑空兵器(HGV)対処能力を強化しつつ、小型無人機に対処する能力などを構築。 概ね10年後までに 滑空段階でHGVに対処するシューター等の導入により対処能力を一層強化するとともに、ノンキネティックな迎撃手段の本格導入により小型無人機等に対する対処能力を獲得。また、各種アセットを接続し、効率的な戦闘を実現。
主な事業 ※ 金額は精査・調整中であり、変動があり得る。	
・中距離地对空誘導弾03式中SAM (改) (0.2兆円) ・イージスシステム搭載艦 (0.4兆円) 及び関連経費 (港湾施設等) (0.13兆円) ・SM-3Block II A ミサイル (0.2兆円) ・SM-6 (0.1兆円) ・PAC-3MSE (0.2兆円) ・A ¹ トカトスMの改修等 (0.2兆円) ・早期警戒機E-2D (0.2兆円) ・HGV 対処用誘導システムの開発 (0.2兆円) ・中SAM (改) 能力向上型の開発 (0.09兆円) ・J A D G E 関連事業 (0.3兆円) ・FPS-5 / FPS-7 (0.02兆円) ・M I M O (0.05兆円)	
   	

Sustainability and Resilience in the Maintenance of Guided Missiles

持続性・強靱性 (弾薬・誘導弾の整備)	
必要性	○ 有事において我が国への侵襲を阻止するためには、必要十分な量の弾薬を保有しておくことが必要。また、弾薬の保有量は抑止力の重要な要素。特に誘導弾については、技術の高度化に伴う価格上昇もあり、十分な数量を整備出来ないのが現状であるが、実効的な対処力・抑止力のためには、誘導弾を早急に充実させることが必要。 ○ スタンド・オフ・ミサイルをはじめとした必要な弾薬について、企業の製造態勢を強化し、早期に配備するとともに、継続的な部隊運用に必要な各種弾薬の確保に資した火薬庫を確保して保管体制も強化。
整備の方向性	2027年度までに 必要数量が不足している状況を解消すべく早期に弾薬・誘導弾の必要数量を整備。また、スタンド・オフ・ミサイルをはじめとした一部の弾薬・ミサイルについては企業の製造態勢を強化し、ラインマックスを拡大。陸自海自の火薬庫をそれぞれ増設。 概ね10年後までに 新規装備品も含め、弾薬・誘導弾の適正在庫確保を維持。保有予定の弾薬を全て格納するための火薬庫の増設を完了 (経費の整理としては、既存火薬庫等の改修・建替を施設整備として整理。)。
主な事業 ※ 金額は精査・調整中であり、変動があり得る。	
・中距離地对空誘導弾03式中SAM (改) (再掲) ・SM-3Block II A ミサイル (再掲) ・SM-6 (0.1兆円) ・SM-2 (0.08兆円) ・訓練弾等 (0.8兆円) ・火薬庫等の改修・建替 (0.05兆円)	
・艦対空誘導弾「ア」0-ミサイルRIM-162P 07II (0.1兆円) ・18式魚雷 (静粛型) 、12式魚雷 (0.1兆円) ・PAC-3MSEミサイル (再掲) ・空対空ミサイルAIM-120 (0.1兆円) ・空対空ミサイルAAM-4B (0.06兆円)	
  	

【Commercialization of Composite Solid Propellants at the Akagi Plant】

In order to respond to the rapid increase in demand, we are shifting to a phase in which we aim for mass production and commercialization of the solid propellants that we have been developing to date. For the commercialization of solid propellants for space and defense applications, we plan to establish a mass-production framework and enter the market by expanding inspection facilities, storage facilities, and other infrastructure, in addition to the manufacturing facilities at the Akagi Plant.

[Solid Propellants for Space Applications]: Under consideration full-scale entry into the market

Production site: Akagi Plant

Applications: Commercial rockets, sounding rockets, and core rockets

Planned start of production: Under consideration

New facilities: Manufacturing equipment and buildings, as well as warehouse facilities

Planned investment amount: Under consideration

[Defense Solid Propellants]: Full-scale market entry decided; mass production plan underway

Production site: Akagi Plant

Applications: Defense-related products

Planned start of production: From 2028 onward

New facilities: Manufacturing equipment and buildings, as well as warehouse facilities

Planned investment amount: Approximately 8 billion yen (to be funded from initial procurement costs)

【Future plans for solid propellants for space applications】

- Establishment of a mass-production framework and full-scale entry into the market
- (trial sales are currently underway and will be expanded after a successful launch)
- Expansion of the lineup of launch vehicle models using our propellants
- Development of cost-effective propellant manufacturing technologies utilizing robotics and AI
- Development of new solid propellants with unique characteristics

【Future plans for defense solid propellants】

- Establishment of a mass-production framework and full-scale entry into the market
- (to start in fiscal 2028 with sales of several hundred million yen; plans for subsequent years are yet to be determined)
- Expansion of the lineup of launch vehicle models using our propellants
- Entry into defense-related components and outsourced defense-related services
- Development of new solid propellants compatible with rockets currently under development

For Confidence and Infinite Challenges



Giving Shape to Infinite Possibilities

(This document is prepared in reference to the Japanese disclosure. In the event of any discrepancies or inconsistencies between this English version and the original Japanese document, the Japanese version shall prevail.)

【Q&A Session】

Date	:	Tuesday, December 16, 2025, 10:30–11:30 (JST)
Format	:	Zoom webinar
Speakers	:	• Yoji Yamaguchi, Executive Officer, in charge of Research & Development • Fumio Ogawa, Executive Officer, President (Head) of Research & Development • Hajime Yamamoto, General Manager, Public Relations & IR Group

Q: Is it correct to assume that solid propellants will continue to be used for defense applications going forward?

Yamaguchi: That is correct. Solid propellants are expected to remain in use for defense missiles because immediate readiness is essential for such systems.

Q: You described composite propellants as a type of solid propellant. Regarding the oxidizer contained in those propellants, is it possible that alternatives to ammonium perchlorate will emerge? Also, for another solid propellant type — double-base propellants (smokeless powder) — is ammonium perchlorate used there?

Yamaguchi: Because oxidizers are used in large quantities, we expect that ammonium perchlorate — which has a simple structure and is easy to handle — will continue to be used.

Regarding double-base propellants (smokeless powder): these are known for producing little or no smoke and, since they do not contain metal powders (such as aluminum), they are less likely to be detected by radar. Publicly available information is limited, but generally they are primarily used in artillery shells. Ammonium perchlorate is not used in those propellants.

Q: How many companies worldwide are capable of manufacturing ammonium perchlorate?

Ogawa: In Japan, we are the only company. I understand that it is produced in parts of the United States, France, and China. However, because this product is subject to strict export–import controls under foreign exchange and foreign trade laws, we believe that our supplying Japan’s domestic demand for ammonium perchlorate will remain unchanged going forward.

Q: Is it correct to understand that oxidizers required to manufacture missiles are produced in the United States, France, and Japan? If so, might Japan consider exporting to increase global supply in the future?

Ogawa: That is one possible perspective. We have previously exported for space rocket applications to the United States, but currently we supply only domestic customers. Regarding defense, there are many barriers — including the Three Principles on Transfer of Defense Equipment and Technology — so we do not consider it easy to export defense-related items.

Q: There has been discussion about revising the Five Categories under the Three Principles on Transfer of Defense Equipment. It's possible that defense exports could increase beyond your current outlook. From next fiscal year onward, what impact do you expect this could have on your company? Please be specific.

Yamaguchi: There is nothing concrete at this point. If exports are initiated by our customers rather than by our company directly, demand could increase accordingly.

Q: My understanding is capital expenditure for ammonium perchlorate expansion occurs in three phases. Having completed Phase 1, are you already able to increase production?

Ogawa: With the completion of Phase 1 works, we can increase production capacity to approximately 1.6 times the initial level.

Q: Earlier you mentioned that JPY 8.0 billion of capex for solid propellants will be covered by “initial cost subsidy (初度費)”. Is “initial cost subsidy” a defense-sector term? Should we understand this as a government subsidy?

Yamaguchi: The “initial cost subsidy” refers to funds provided by the government that are allocated through our customer.

Q: Will the entire JPY 8.0 billion capex be covered? If so, is it correct to understand the company will bear no net cost?

Yamaguchi: That understanding is correct.

Q: Do you plan further capacity increases for solid propellant production?

Yamaguchi: Our immediate priority is to bring the currently progressing investments into operation. We would actively consider further capacity expansion thereafter.

Q: Please provide any supplementary comments, to the extent possible, on development status for solid propellants for both space and defense applications.

Yamaguchi: For space applications, we plan to continue efforts to streamline production. Regarding defense applications, we cannot disclose specific matters for reasons of economic security. Broadly speaking, we are engaged in projects that align with defense development plans as publicly described.

Q: What prompted your entry into defense solid propellants?

Yamaguchi: This was part of a downstream business expansion from a raw material manufacturer standpoint. We also owned a permitted explosive plant that complied with statutory safety distances and other regulations, which made solid propellant production an attractive opportunity. Initially the target market was space rockets, but since the required technology was established, we expanded into defense applications as well.

Q: What makes it difficult for new entrants to join the solid propellant business? Where are the barriers to entry?

Yamaguchi: Holding ammonium perchlorate raw material is a significant advantage. Solid propellant production requires an explosives factory, so obtaining the necessary manufacturing permits and approvals makes new entry substantially difficult. The difficulty for foreign manufacturers to enter the market is another factor.

Q: Will your business overlap with other propellant manufacturers and lead to direct competition?

Yamaguchi: We regard other propellant manufacturers as important customers for our ammonium perchlorate. Our intention is to produce and supply in areas where supply is insufficient; we do not see this as creating a competitive market environment.

Q: How will “initial cost subsidy” be accounted for, and when will it be recognized?

Ogawa: It is planned to be recognized in a lump sum upon completion of the propellant plant (around fiscal 2027 year-end to fiscal 2028). The exact accounting classification is under discussion between our finance department and our auditors, so we cannot provide a definitive answer at this time.

Q: As a future plan for defense propellants, will you extend operations to defense hardware components?

Yamaguchi: While still at a conceptual stage, we see demand beyond propellants at our explosives facility and would like to consider opportunities to expand into areas other than propellants as appropriate.

Q: Why is manufacturing electrodes in-house a strength? Please explain in more detail.

Ogawa: Electrolysis technology has been a core competency of our company for many years. An ammonium perchlorate plant uses numerous electrolytic cells, each of which requires electrodes and periodic maintenance or replacement. Being able to prepare and maintain electrodes and cells in-house provides significant technical and cost advantages.

Q: I understand Epsilon rocket launches have suffered failures recently. What is your outlook for market expansion beyond Epsilon? Do you expect demand from other small launchers?

Yamaguchi: Japan's Basic Plan for Space Policy calls for increasing launch cadence. If small launch vehicles beyond Epsilon increase, demand for our solid propellants could grow. From the perspective of ammonium perchlorate sales, we also have expectations for Epsilon's eventual success and hope for its early recovery.

Q: Which market is larger: space rockets or defense missiles? Which companies are your competitors, and how do you expect to win share?

Ogawa: In terms of quantity, space rocket propellants consume far more material than defense propellants, so we have high expectations for the size of the space rocket market. The competitors as propellant manufacturers are often also important customers for our ammonium perchlorate. Our role is to supply where market demand expands and supply is insufficient. We expect to fill shortfalls rather than engage in aggressive share-taking in a highly competitive environment.

Q: Over the past five years, how have sales of ammonium perchlorate grown? Have you been raising prices as well?

Ogawa: After completion of the Phase 1 expansion, manufacturing capacity increased to 1.6 times, and we expect sales volumes to rise by a similar magnitude. Regarding price increases, costs such as labor, energy, and raw materials have tended to rise, and we are considering passing those cost increases through to prices.

Q: The 1.6× capacity increase has been completed; are you already shipping at that higher volume this fiscal year?

Ogawa: We are not yet producing at the maximum capacity enabled by the 1.6× expansion; we expect to approach full capacity gradually.

Q: For future development of ammonium perchlorate, are product specifications for defense missiles different from those for space rocket propellants? Will development be differentiated from other manufacturers?

Yamaguchi: Requirements for defense missiles and space rockets vary widely (for example, improving thrust is a basic requirement among others). We will address each requirement, including through R&D. As for customers who purchase our ammonium perchlorate, we do not monitor the specifics of their development activities; our role is to deliver the raw material at the quality they request.

Q: The total investment appears to be roughly JPY 2.5 billion for ammonium perchlorate across Phases 1–3 and JPY 8.0 billion for solid propellant facilities — about three times more for solid propellant investment. Do you expect sales and profit to ultimately be roughly three times higher for solid propellants than for ammonium perchlorate?

Yamaguchi: Revenue from defense solid propellant is expected to start at several hundred million yen and grow thereafter in both sales and profits. We cannot disclose specific numerical forecasts.

Q: Do you also participate in development work for missiles or rockets, and do you earn revenue from such development or contracted work? For example, could the Ministry of Defense contract your company for development and thereby provide development fees recorded as revenue?

Yamaguchi: That is a possible scenario. The defense development plan emphasizes accelerating R&D, and if asked, it is conceivable that development contract fees could be allocated to our company.

Q: For space demand, H3 rockets appear to be a major factor for the time being. Do you expect Epsilon to return and contribute to the market? Between an H3 booster and a single Epsilon rocket, which consumes more ammonium perchlorate? Also, you mentioned that “beyond solid propellants the market becomes much larger” — what do you mean by “beyond”?

Ogawa: If Epsilon becomes successful, we expect sales of ammonium perchlorate to increase. In terms of quantity, one Epsilon rocket consumes a similar amount of ammonium perchlorate as an H3 auxiliary booster; since the H3 may use multiple boosters, an H3 launch can consume more ammonium perchlorate.

Yamaguchi: We cannot comment in detail on future defense initiatives or growth prospects, but the company is hopeful about expanding into related areas.

Q: There are reports of joint U.S.–Japan development of hypersonic missiles. For a conventional missile the propellant quantity is relatively small. How much propellant would a hypersonic missile use? As this is a joint U.S.–Japan development, might there be business opportunities for your company with regard to quantities used or for the portions maintained in the United States?

Yamaguchi: We must refrain from answering on matters of that sensitivity.

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