ECGA
European Advanced Carbon and Graphite Materials Association

REQUEST FOR AN AMENDMENT TO THE COMBINED NOMENCLATURE

Introduction of new CN codes to better track the imports of battery anode materials

The European Advanced Carbon and Graphite Materials Association and its members request the European Commission to introduce two new codes under 3801 10. The goal of this change is (1) to better track the imports of battery-grade graphite anode materials (BAM) used in lithium-ion batteries and (2) to account for technological changes in the chemistry of those anode materials. Ultimately, this step will support the EU's strategic autonomy in battery materials, and facilitate targeted policy interventions in a market currently dominated by China (97% global market share, according to consultancy Wood MacKenzie).

European Advanced Carbon and Graphite Materials Association

A Absence of Appropriate Custom Codes

No custom code in the EU corresponds exactly to battery-grade graphite anode material, and the newly added 3801 1010 is too broad to capture mostly BAM.

A.1 The custom code 3801 1000 15 does not correspond at all to BAM.

This custom code is defined as follows: "Artificial graphite in blocks or cylinders with an apparent density of 1.5 g/cm³ or more and an electrical resistivity of 7.0 µ.Ω.m or less with a nominal diameter of more than 350 mm" .

Battery-grade graphite anode materials are in powder form. Their physical shape cannot possibly correspond to the terms "blocks or cylinder", especially if the diameter of these would be "blocks or cylinders" is more than 350mm. Instead, the typical particle size of BAM is measured in microns, not in millimetres or centimeters.

A.2 The new custom code 3801 1010 is too broad to capture mostly BAM.

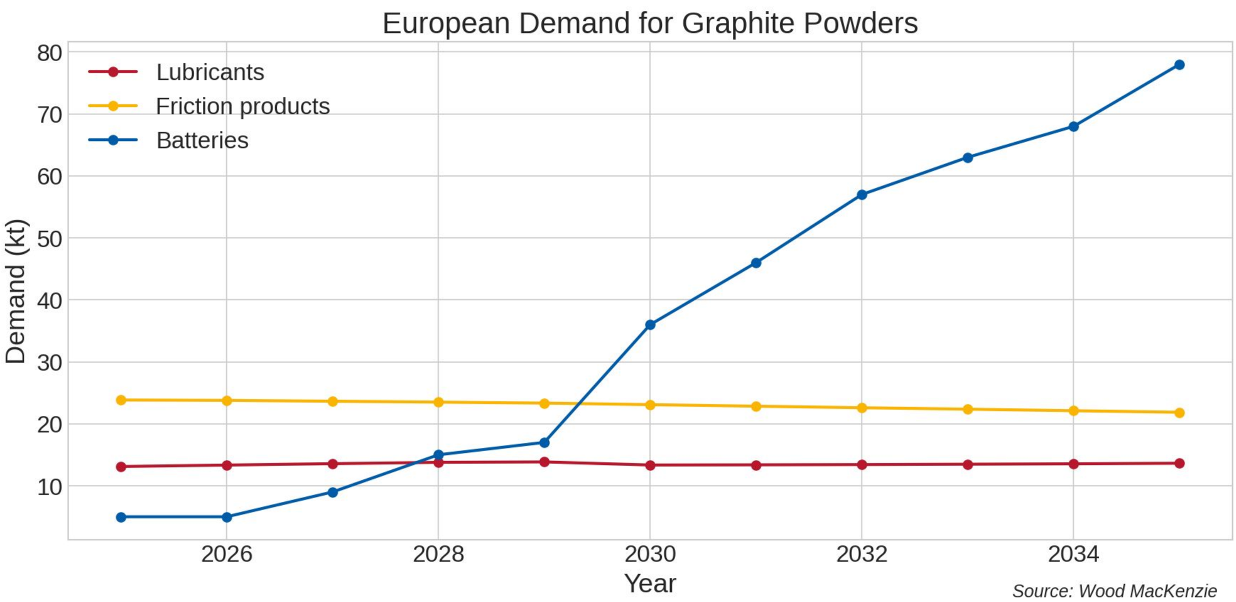
In 2025, the EU adopted a new custom code 3801 1010 which is defined as "Artificial graphite -- Powders containing not more than 0,05 % of ash by weight".

This custom code will include graphite powders used as BAM, but it will not be restricted to them. Depending on their exact morphological structure, graphite powders with low ash content can have different electro-chemical characteristics and thus different uses than as anode materials. Thus, graphite powders with low ash content can be also found in conductive additives for plastics and coatings, dry lubricants, or in specialty greases.

As shown on the graph below, the European demand for those other high-quality powders is large enough to prevent an accurate analysis of BAM trade flows. Our consultancy Wood Mackenzie estimates EU demand for high-purity graphite powders in the lubricants and friction products segment at approximately 36 kilotons. EU-based production capacity for powders meeting the low ash-content threshold of 3801 1010 is minimal[1]. As a result, a substantial share of this demand is met by imports — primarily from Switzerland, China (e.g. Qingdao Haida Graphite, Qingdao Tianhe Graphite) and Japan (e.g. Nippon Graphite Industries). These non-battery imports would be captured under 3801 1010 alongside battery anode materials, distorting the very trade data the code is meant to provide. Even by

[1] We could only identify one single EU producer of high-purity powders for lubricants and friction products. As the sole producer, our member is unable to disclose production data, but their volumes are understood to be modest relative to estimated EU demand. Other EU-based producers who serve the lubricants and friction products market generally do not reach the purity level captured by 3801 1010.

2035, when battery demand is projected to dominate, demand for lubricant and friction powders will remain significant enough to compromise the analytical value of the code without further refinement.



B Our proposals

B.1 Improve the existing 3801 1010 to better capture BAM

We propose to improve the new (as of 2026) custom code 3801 1010 in two categories in order to better target graphite powders used as battery-anode materials from other types of graphite powders. We propose to use the particle size or the tap density as a differentiation criterion. We strongly recommend using the median particle size (typically called D_{50}) as this is a much better differentiation factor than tap density, but also propose tap density as a fallback if the first option is not possible for technical reasons.

B.1.a Differentiation factor: particle size

If **particle size** is used, the changes would look as follows (emphasised in italic):

> 3801 10 10 Powders containing not more than 0,05 % of ash by weight *and with a median particle diameter of 25µm or less*

The CN already contains one example of a product definition based on particle size. 2818 1011 corresponds to "artificial corundum, whether or not chemically defined, with an aluminium oxide content of 98,5 % by weight or more, with less than 50 % of the total weight having a particle size of more than 10 mm".

The median particle size of a powder is easy and straightforward to determine with a laser diffractometer, which is a machine that shines a laser through a sample to measure the size of its grains. It gives a result in minutes. The procedure[2] goes as follows:

- Take a tiny sample from the shipment.
- Load it into the machine (usually with a liquid or air to separate clumps).
- Press start. The machine does the work.
- Read the D_{50} value on the screen. This number means half the powder (by volume) is finer, and half is coarser, than this size.

A low D_{50} value is highly characteristic of battery-grade graphites. Battery manufacturers want very fine particles because they compact better and thus maximise volumetric energy density. This specialised processing (called micronisation) is costly, due to the losses and the need for specialised equipment. Thus, it is only done for a few high-end specialty powders, and in particular for battery-grade products. This is why we strongly recommend amending the CN by using the D_{50} parameter.

B.1.b Differentiation factor: tap density

The swift determination of the median particle size typically requires a laser diffractometer. Other methods exist, for example the use of a scanning electron microscope (SEM). The pictures taken with an SEM can be analysed with a dedicated software to determine D_{50}. However, diffractometers and SEMs are both relatively expensive instruments. The largest harbours in the EU might have them readily available, but there is no guarantee that every entry point to the EU does. Therefore, the Member States might ask for the use of another differentiation factor than the median particle size.

Under this eventuality, we propose an alternative measure to differentiate between BAM and other specialty powders. **Tap density** corresponds to the bulk density of a powder achieved after a standardized tapping process that consolidates the material. It is less discriminatory than the D_{50} value because some specially processed graphite powders also compact well when tapped. However, it does exclude coarse, unprocessed, or expandable graphites. In this case, the changes would look as follows (emphasised in italic):

[2] This can be done without gloves, since graphite is not a hazardous material.

> 3801 10 10 Powders containing not more than 0,05 % of ash by weight *and with a tap density above 0.6 g/cm³*

Tap density is **relatively simple to measure with basic equipment**: a graduated cylinder and a scale. The procedure goes as follows:

- Weigh 10 g of powder
- Pour into cylinder
- Tap 100 times from 1 cm height
- Record volume
- Divide the mass by the volume to obtain the tap density.

For faster testing in high-traffic custom offices, a specialised tapper can be bought for around 500€ (mechanical) or 2000€ (fully automated).

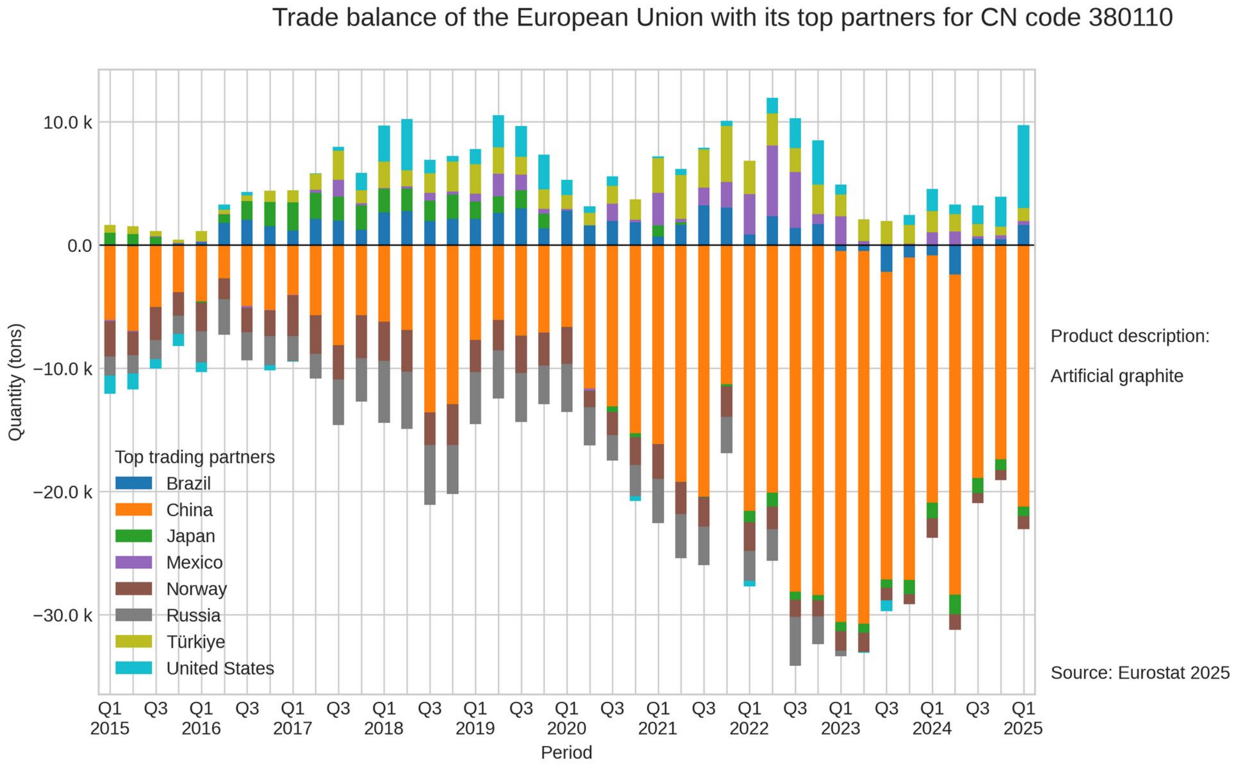
C Reasons for our Request

C.1 Trade transparency

This current classification system creates a fundamental transparency problem. The only two 10-digit codes under 3801 1000 currently registered on Taric (3801 1000 15 and 3801 1000 85) do not accurately correspond to the technical specifications of BAM. The newly introduced 8-digit code (3801 1010) will only marginally improve the situation. This means that China's overwhelming dominance (97% of synthetic and 79% of natural battery-grade graphite) will remain hidden in official EU trade statistics, because BAM trade data will be aggregated back to broader categories.

This lack of transparency is problematic for both Commission officials and private stakeholders. Commission officials need to rely on private-sector data to carry out accurate risk assessments of supply chain vulnerabilities. Likewise, stakeholders need to pay for expensive market intelligence reports provided by consultancies, most of which prove to be approximative and lagging behind the actual evolution of the market. Spotting long-term trade patterns is also often complicated due to the lack of reliable historical data with a systematic methodology.

As a result, neither the Commission nor private actors can assess the true scale and origin of battery-specific imports based on public data only. For example, one could guess from the graph below that the EU is exporting battery-grade graphite to the United States, Turkey or Mexico. However, the types of graphite which are sent to those countries have nothing to do with batteries. They are instead high-end specialty products such as those used in the semi-conductor industry. Besides, specialty graphites are also imported from China.



C.2 Alignment with core EU policies: CRMA, NZIA and CBAM

The proposed introduction of the new codes for battery anode materials will contribute to the achievement of the European Union's strategic ambitions in the green transition and industrial resilience.

Graphite's designation as both a Critical and Strategic raw material under the Critical Raw Materials Act underscores its vital role for the batteries sector. Indeed, graphite demand for batteries is projected to surge six-fold by 2035. The Act mandates ambitious 2030 benchmarks for extraction, processing, and recycling, alongside supply chain monitoring and strategic stock requirements. Similarly, the Net-Zero Industry Act (NZIA) targets 550 GWh of EU battery production capacity by 2030. This will require approximately 550 kilotons of battery-grade graphite annually. Yet, without distinguishing battery-anode material from other graphite-based products, authorities cannot establish a baseline for imports and assess the supply gap against strategic targets.

Furthermore, the EU's sustainability requirements – including carbon footprint declarations under the Batteries Regulation and the Carbon Border Adjustment Mechanism - will necessitate distinct tracking of battery-anode material. Carbon footprints vary significantly between all the products currently classified under the same CN heading. Therefore, the creation of default values under CBAM for battery-anode material cannot possibly be achieved without separate tracking at the 8-digit level.

Finally, the current lack of transparency impedes the effectiveness of traditional trade barriers such as the trade defence framework or export controls. For example, the U.S. case against Chinese battery-grade graphite built on trade statistics collected since 2022 to prove dumping and injury. The EU lacks comparable evidentiary precision, even at the 10-digit level. This would severely complicate the task of officials from DG Trade who would wish to investigate a trade defence complaint. They would have a hard time retrospectively assessing past trade flows and their prices.

C.3 Facilitation of investment

Under the European Green Deal Investment Plan and InvestEU, over €1 trillion is earmarked for the green transition until 2027, with battery production recognized as a strategic priority. However, the current lack of granular import data for battery-grade graphite is problematic: investors cannot accurately quantify market size, substitution potential, or competitive risks.

This uncertainty artificially inflates perceived investment risk, stifles private capital deployment, and undermines the effectiveness of public funding mechanisms. It also hinders OECD and WTO initiatives to map the supply chains of critical minerals.

For capital-intensive projects, such as commercial-scale anode plants (€750 million to €2 billion CAPEX), this data vacuum delays financial close, increases due diligence costs, and ultimately jeopardizes the EU's ambitions to capture 40% of its battery demand domestically by 2030. ECGA estimates that a more accurate classification would support the production of 200 000 tons of EU anode output (€1 billion in import substitution at current prices).

At its core, this lack of transparency of the European market for battery-anode material reflects the lack of maturity of the sector. The European Commission only submitted at the beginning of this year a request for the standardisation of battery-grade materials to the European Standardisation Organisations.

Meanwhile, in China, which has the most mature market in the world, the government published in 2019 a detailed national standard (GB/T 24533-2019). This standard has allowed the Chinese government to track battery-grade graphite flows, thus providing its industry with real-time market intelligence, while EU producers operate without equivalent visibility.

Likewise, the USA, under the Biden presidency, recognised that the granular tracking of battery anode materials is essential for industrial strategy execution and trade defence. In its binding ruling NY N325161 (April 2022), the US Customs Office classified battery-grade artificial graphite under HTSUS 3801.10.5000.

C.4 Technical differences with other industrial graphites

Battery-grade graphite undergoes specialized processing to meet precise electrochemical and structural requirements essential for lithium-ion battery anodes. These modifications fundamentally differentiate it from industrial-grade graphites used in lubricants, refractories, or metallurgy.

C.4.a Spheronization and coating

Spheronization is critical for natural graphite, where mined flakes are mechanically shaped into spherical particles. This process improves lithium-ion diffusion pathways and electrode homogeneity.

Surface coating with an amorphous carbon layer (≤100 nm thickness) enhances stability by preventing direct contact between graphite and the electrolyte, reducing side reactions during cycling.

Micronisation engineering ensures a tightly controlled size distribution (typically d_{50} = 10–20 μm), enabling optimal particle packing during electrode fabrication. This maximizes tap density (typically >1 g/cm^3, sometimes as low as 0.6g/cm^3), thus increasing volumetric energy density in batteries.

C.4.b Electrochemical properties

Battery-grade graphite must demonstrate efficient reversible lithium intercalation — the process where lithium ions insert between graphite layers during charging and exit during discharging. This requires a stable crystalline structure (predominantly hexagonal) with minimal defects. Electrochemically, it operates within a strict voltage range of 0.01–2.0 V vs. Li/Li^+, avoiding lithium plating below 0.01 V or electrolyte decomposition above 2.0 V. A key metric is minimal irreversible capacity loss (<10% in the first cycle), achieved by limiting parasitic reactions that consume lithium to form the solid-electrolyte interphase (SEI). High first-cycle coulombic efficiency (>92%) and reversible capacity (>340 mAh/g for synthetic; >360 mAh/g for natural) are non-negotiable for commercial viability.

C.4.c Purity and contaminant control

Ultra-high purity (>99.95%) is mandatory to prevent metallic impurities (e.g., Fe, Cu) from catalysing electrolyte decomposition or causing internal short circuits (and fire hazards). Sulfur content must be minimized (<50 ppm in synthetic graphite) to avoid gas generation and instability at the electrolyte interface. Likewise, the surface area of graphite particles must be kept low (<4 m^2/g) to reduce unwanted electrolyte reactions.

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D Market Overview for Battery-Grade Graphite

D.1 Sector projected to grow sixfold by 2035

According to our consultancy, Wood MacKenzie, battery graphite demand is experiencing unprecedented expansion, projected to grow sixfold from 1.8 million metric tons (2024) to 11 million tons by 2035. This surge is propelled by electric vehicle (EV) adoption and energy storage deployments, with batteries now representing 40% of global graphite consumption. A typical EV requires up to 52 kg of graphite, constituting 15–28% of battery mass. Moreover, in the near terms, substitutes (silicon composites) are unlikely to exceed 10% market share.

China dominates global production, controlling 97% of synthetic graphite and 79% of natural graphite output. Key players include Ningbo Shanshan, BTR, and Shanghai Putailai, which collectively operate over 1 million tons of capacity. Europe and North America are developing local supply chains. Most Western players are still at the pilot or early commercial phases. Chinese firms are concurrently expanding overseas.

D.2 Two main production pathways: natural and synthetic (artificial)

Natural graphite is sourced from mined flake ore. This ore undergoes purification, spheronization and coating. It offers lower feedstock costs and higher lithium storage capacity but faces 10–15-year project cycles and environmental costs from acid purification.

Synthetic graphite is derived from petroleum/coal feedstocks. It requires high OPEX at current energy prices due to energy-intensive graphitization (2,800–3,000°C) and volatile feedstock prices (based on petroleum). But it is easier to scale up and thus projected to supply 75% of anode demand by 2035. Current strains on the feedstock supply (needle coke) have motivated China to more than double its domestic capacity during the last three years.

D.3 Key European innovations: recycling, energy-efficiency, bio-sourced

Cut-throat Chinese competition is endangering the burgeoning European industry. According to Accelerate Capital, Chinese synthetic graphite prices fell approximately 25% from 2022 to 2024 due to oversupply, with some segments dropping by more than half. They have now stabilised at a low level in comparison with European production costs.

ECGA members have been betting on innovative production techniques to improve their competitiveness. They are best in class for energy use, processing time and CO_2 emissions. For example, the CO_2 footprint of their product remain below 5 $kgCO_2e/kg$, while Chinese equivalent materials start at 15. ECGA members are also scaling-up the use of cleaner feedstocks (recycled, bio-based).

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