



Competent Authority Approval of Explosives

Given the nature of their hazard, it's not surprising that manufacturing, distribution, storage and transportation of Class 1 explosive materials are strictly controlled and regulated. In many instances, manufacture and distribution of explosive materials initially requires a process to obtain approval from the competent authority of the country of manufacture, who will examine and classify the material. In the United States, several government agencies are involved in regulating explosives, with transportation of these materials regulated by the U.S Department of Transportation's Pipeline and Hazardous Materials Safety Administration. Many other individual countries also place additional restrictions on shipments of explosives (See IATA 2.8.1 State Variations).

U.S. CFR Title 49 §173.51(a) states that unless otherwise provided in the subpart, no person may offer for transportation or transport any explosive, unless it has been tested and approved by the Associate Administrator. The classification and approval process for new explosives is outlined in §173.56; once the process is successfully completed, a competent authority approval document is provided from PHMSA that contains a unique identification number assigned to the material. This identification number has a prefix of "EX-" or, in the case of some consumer fireworks, an "FC-" prefix.

U.S. and international regulations have additional and unique requirements regarding documentation of explosives shipments, including the requirement to indicate the competent authority approval reference number on the transport document (HAZMAT bill of lading, IATA Shipper's Declaration for Dangerous Goods form, IMO Dangerous Goods Declaration form). While the ICAO/IATA and IMDG transportation regulations all require this identification number to be shown for certain fireworks (IATA 8.1.6.11.5; IMDG 5.4.1.5.15), the U.S. regulations require the U.S.-assigned "EX" or "FC" number to be shown on the transport document and/or the package containing any explosives transported to, from, through or within the United States. There are, however, exceptions to the U.S. requirements, and these are summarized in the last sentence of IATA Variation USG-05, which states "Articles of the kind described in 49 CFR §173.56(h) and §173.166(c)(2) do not require prior approval or an EX-number."

49 CFR §173.56(h) states that "The requirements of this section do not apply to cartridges, small arms which are:

- (1) Not a forbidden explosive under 173.54 of this subchapter;
- (2) Ammunition for rifle, pistol, shotgun or tools;
- (3) Ammunition with inert projectile, or blank ammunition; and
- (4) Ammunition not exceeding 50 caliber for rifle or pistol cartridges or 8 gauge shotgun shells.

Cartridges, small arms, meeting the criteria of this paragraph (h) may be assigned a classification code of 1.4S by the manufacturer.

Therefore, provided an explosive product complies with all of the criteria outlined in paragraph §173.56(h) above, the product does not require an "EX" number, as it may be classified as Division 1.4S by the manufacturer.

§173.166 refers to EX number requirements for safety devices, defined as "articles which contain pyrotechnic substances or hazardous materials of other classes and are used in vehicles, vessels or aircraft to enhance safety to persons." Common examples are air bag inflators, air bag modules and seatbelt pretensioners and pyromechanical devices. As these devices contain an explosive component, they must also be tested by a PHMSA-authorized person or agency for explosive classification purposes, and are assigned to Division 1.4G or Class 9 as applicable. §173.166(c)(2) states that "A safety device,



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when classed as a Class 9 (UN3268), is excepted from the EX number, or product code shipping paper requirements of paragraph (c) of this section.”

If you are involved in shipping explosives, be sure to pay close attention to the details required, read Variations, and if your product is required to be assigned an “EX” or “FC” number, be sure to include it on documentation and/or package marks as required.

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