

Filter Disc Hsn Code

A practical guide to filter disc hsn code, covering the reader intent, the relationship to filter disc hsn code, key evaluation criteria, common risks, and the information the intended project audience should confirm before taking the next step.



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Main topic: Filter Discs & Packs

<https://www.kaifil.com/products/filter-discs-packs/>

In the global landscape of industrial manufacturing, the precision of technical documentation is as critical as the precision of the components themselves. For procurement managers, process engineers, and logistics specialists, understanding the filter disc hsn code (Harmonized System of Nomenclature) is essential for ensuring regulatory compliance, calculating accurate landed costs, and streamlining international trade. Filter discs and packs are foundational components in industries ranging from polymer extrusion and chemical processing to food and beverage production. This guide provides a technical overview of how these components are classified, the engineering considerations that influence their performance, and the factors that should guide the selection of high-quality filtration solutions.

The Role of HSN Codes in Industrial Filtration Procurement

The Harmonized System, maintained by the World Customs Organization (WCO), serves as a universal language for the classification of goods. For specialized components like Filter Discs & Packs, the HSN code determines the applicable customs duties, tax rates (such as GST or VAT), and any import/export restrictions.

Incorrect classification can lead to significant financial risks, including overpayment of duties, customs delays, or legal penalties. In the context of stainless steel filtration, classification often hinges on whether the product is viewed as a raw material (wire mesh) or a finished industrial component (a filter part). For most international transactions, filter discs made of stainless steel wire mesh are typically classified under Chapter 84 or Chapter 73.

Technical Classification: Determining the Correct Filter Disc HSN Code

When identifying the filter disc hsn code, two primary categories are frequently utilized depending on the degree of fabrication and the intended application:

1. HSN 8421: This heading covers "Centrifuges, including centrifugal dryers; filtering or purifying machinery and apparatus, for liquids or gases." Specifically, sub-heading 8421.99 is often applied to parts of filtering or purifying machinery. If the filter disc is designed as a specific, replaceable part of a larger industrial filtration machine, this classification is generally the most accurate.

2. HSN 7314: This heading covers "Cloth (including endless bands), grill, netting and fencing, of iron or steel wire; expanded metal of iron or steel." If the discs are considered simple cut pieces of wire mesh without additional frames or complex assembly, they may fall under 7314.14 (Stainless steel cloth) or 7314.49.

3. HSN 7326: This is a residual category for "Other articles of iron or steel." Filter discs that have undergone significant secondary processing—such as spot welding into multilayer packs or the addition of aluminum or stainless steel rims—are sometimes classified under 7326.90.

Engineers must work closely with suppliers to ensure that the technical description on the commercial invoice aligns with the physical characteristics of the product to avoid classification disputes.

| Engineering Specifications of Filter Discs & Packs

Beyond the administrative requirements of the filter disc hsn code, the technical performance of a filter disc is determined by its construction and material properties. Industrial filtration requires a balance between mechanical strength, filtration fineness, and flow capacity.

| Mesh Weave Types

The weave pattern of the wire mesh is the primary determinant of filtration accuracy. Common weaves used in the production of filter discs include:

Plain Weave: The most common and straightforward weave, where each warp wire crosses over and under each shute wire. It provides a consistent pore size and is ideal for general-purpose filtration.

Twill Weave: In this pattern, each shute wire passes over and under two warp wires. This allows for the use of heavier wires in a given mesh count, increasing the mechanical strength of the disc.

Dutch Weave (Plain and Twill): These weaves utilize a higher density of shute wires than warp wires. This creates a "tortuous path" for the fluid, allowing for extremely fine filtration (down to 5-10 microns) while maintaining high pressure resistance.

| Single Layer vs. Multilayer Packs

While a single-layer filter disc may suffice for low-pressure applications or coarse filtration, many industrial processes require multilayer packs. These packs consist of several layers of wire mesh—often varying in mesh count—welded together or bound by a metal rim.

Support Layers: Coarser mesh layers provide structural rigidity, preventing the finer filtration layer from deforming under high differential pressure.

Drainage Layers: These layers help distribute the flow across the entire surface of the filter, optimizing the effective filtration area.

Spot Welding and Framing: Multilayer packs are often spot-welded at specific points to ensure the layers remain aligned during installation and operation. Aluminum or stainless steel rims (frames) can be added to provide a leak-proof seal within the filter housing.

| Material Science: Stainless Steel and Alloy Selection

The durability of a filter disc is heavily dependent on the alloy selected. Since these components often operate in corrosive environments or under high temperatures, material selection is a critical engineering decision.

| Stainless Steel 304 and 304L

Grade 304 is the standard "18/8" stainless steel. It offers excellent corrosion resistance in a wide range of atmospheric environments and many corrosive media. The "L" (Low Carbon) variant is preferred for components that require extensive welding, as it minimizes carbide precipitation that can lead to intergranular corrosion.

| Stainless Steel 316 and 316L

For applications involving chlorides or acidic environments (such as chemical processing or marine applications), Grade 316 is the industry standard. The addition of molybdenum significantly enhances its resistance to pitting and crevice corrosion. Like 304L, 316L is used for welded filter packs to ensure structural integrity.

| Specialty Alloys

In extreme environments, specialty alloys may be required:

Hastelloy: Used for highly acidic or high-temperature chemical filtration.

Inconel: Ideal for high-temperature applications where oxidation resistance is paramount.

Monel: Frequently used in hydrofluoric acid alkylation and marine engineering due to its resistance to seawater and steam.

| Performance Evaluation and Selection Criteria

When specifying Filter Discs & Packs, engineers must evaluate several performance metrics to ensure the component meets the demands of the application.

| Filtration Rating (Micron Rating)

The filtration rating indicates the size of particles the disc is capable of removing. This is categorized into two types:

Nominal Rating: An approximate value indicating the percentage of particles of a certain size that the filter can retain (e.g., 90% of 20-micron particles).

Absolute Rating: The diameter of the largest hard spherical particle that will pass through the filter under specified test conditions. This is critical for high-precision applications in the pharmaceutical or aerospace sectors.

| Pressure Drop (Delta P)

The pressure drop is the difference in pressure between the upstream and downstream sides of the filter. A high initial pressure drop indicates high resistance to flow, which can reduce pump efficiency and throughput. Engineers must select a mesh configuration that provides the required filtration fineness while maintaining an acceptable pressure drop to maximize the service life between cleanings.

| Dirt Holding Capacity

This refers to the amount of contaminant the filter can retain before the pressure drop reaches a terminal limit. Multilayer packs often provide superior dirt holding capacity compared to single-layer discs because the coarser layers can trap larger particles before they reach the fine filtration layer.

| Logistics and Compliance for Global Sourcing

Sourcing industrial filtration components internationally requires more than just technical specifications; it requires a robust understanding of the supply chain and regulatory environment. The filter disc hsn code is just one part of the compliance puzzle.

| Quality Assurance and Certification

When evaluating a manufacturer, technical teams should confirm the following:

Material Test Reports (MTRs): Documentation verifying the chemical composition and mechanical properties of the stainless steel used.

ISO 9001 Certification: Ensuring the manufacturer follows a standardized quality management system.

Mesh Accuracy: Verification that the mesh count and wire diameter meet international standards (such as ASTM E2011).

| Total Cost of Ownership (TCO)

While the unit price is a significant factor, the TCO includes the cost of shipping, customs duties (determined by the HSN code), the frequency of replacement, and the potential cost of downtime. High-quality stainless steel filter discs that can be cleaned and reused often provide a lower TCO than cheaper, disposable alternatives.

| Conclusion: Optimizing Filtration Procurement

Selecting the right filtration solution requires a multidisciplinary approach that combines material science, fluid dynamics, and regulatory knowledge. Identifying the correct filter disc hsn code is a vital step in the procurement process, ensuring that these precision-engineered components move efficiently through the global supply chain.

For engineers and purchasing teams, the focus should remain on technical excellence. By specifying the correct weave, alloy, and pack configuration, and by partnering with manufacturers who provide transparent documentation and material traceability, industrial operations can achieve reliable, long-term filtration performance. Whether the application involves the delicate processing of food products or the high-pressure environment of polymer extrusion, the integrity of the filter disc is the primary safeguard for both equipment and product quality.