

HIGH PILE COMBUSTIBLE STORAGE DOCUMENT #2

COMMODITY CLASSIFICATIONS

4/1999, Revised-1/2012

COLORADO SPRINGS FIRE DEPARTMENT Division of the Fire Marshal



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HIGH PILED COMBUSTIBLE STORAGE DOCUMENT SUMMARIES

- Document 1** **General Information on the Requirements of Chapter 23 of the 2009 International Fire Code.** This document contains general information about high-piled combustible storage and the requirements of Chapter 23 of the 2009 International Fire Code. This document is recommended for first time customers trying to obtain as much practical information as possible prior to plan submittal. This document also contains samples of our questionnaires for both stocking of general commodities as well as plastics. See Table of Contents for copies of these forms.
- Document 2** **Commodity Classifications.** This document contains numerous examples of products and their associated commodity classifications. Use this document to aid in correctly determining the commodity class for a given product or products.
- Document 3** **High Piled Storage of Combustibles in Existing Buildings with Existing Tenants.** This document is the primary resource for those existing facilities obtaining an annual high piled storage permit. All required forms and instructions on how to fill out the forms and what to submit are provided.

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PURPOSE

This document is designed to provide the customer a comprehensive resource in which to accurately determine the commodity classification for product(s) within a facility. Examples of various commodities from both the 2009 International Fire Code and 2010 NFPA 13, Standard on the Installation of Fire Sprinkler Systems, are provided as reference in commodity classification determination.

SCOPE

The scope covers those materials specifically listed within this document or Document 1. The scope also covers those materials that may not be specifically referenced within this document however, exhibit similar characteristics to those listed. This document is not intended to address hazardous or explosive materials. Aerosols, flammable and combustible liquids, hazardous materials and explosives are outside the scope of this document, unless otherwise referenced.

DEFINITIONS

Commodity classifications dictate requirements ranging from smoke vent and building access requirements to maximum pile dimensions and storage heights to sprinkler system design. Therefore, an accurate determination of the commodity classification is essential.

I. General Commodities (Class I, II, III, IV and High Hazard)

Class I Commodities

IFC - Class I commodities are essentially noncombustible products on wooden or non-expanded polyethylene solid deck pallets, in ordinary corrugated cartons with or without single-thickness dividers, or in ordinary paper wrappings with or without pallets. Class I commodities are allowed to contain a limited amount of Group A plastics in accordance with Section 2303.7.4. Examples of Class I commodities include, but are not limited to, the following:

- Alcoholic beverages not exceeding 20-percent alcohol in noncombustible containers
- Appliances noncombustible, electrical
- Cement in bags
- Ceramics
- Dairy products in nonwax-coated containers (excluding bottles)
- Dry insecticides
- Foods in noncombustible containers
- Fresh fruits and vegetables in nonplastic trays or containers
- Frozen foods
- Glass
- Glycol in metal cans
- Gypsum board Inert materials, bagged Insulation, noncombustible
- Noncombustible liquids in plastic containers having less than a 5-gallon (19 L) capacity
- Noncombustible metal products

NFPA 13 - A Class I commodity shall be defined as a non combustible product that meets one of the following criteria: 1) Placed directly on wooden pallets; 2) Placed in single-layer corrugated cartons, with or without single-thickness cardboard dividers, with or without pallets; 3) Shrink-wrapped or paper-wrapped as a unit load with or without pallets.

Class II Commodities

IFC - Class II commodities are Class I products in slatted wooden crates, solid wooden boxes, multiple-thickness paperboard cartons or equivalent combustible packaging material with or without pallets. Class II commodities are allowed to contain a limited amount of Group A plastics in accordance with Section 2303.7.4. Examples of Class II commodities include, but are not limited to, the following:

- Alcoholic beverages not exceeding 20-percent alcohol, in combustible containers
- Foods in combustible containers
- Incandescent or fluorescent light bulbs in cartons
- Thinly coated fine wire on reels or in cartons

NFPA 13 - A Class II commodity shall be defined as a noncombustible product that is in slatted wooden crates, solid wood boxes, multiple-layered corrugated cartons, or equivalent combustible packaging material, with or without pallets.

Class III Commodities

IFC - Class III commodities are commodities of wood, paper, natural fiber cloth, or Group C plastics or products thereof, with or without pallets. Products are allowed to contain limited amounts of Group A or B plastics, such as metal bicycles with plastic handles, pedals, seats and tires. Group A plastics shall be limited in accordance with Section 2303.7.4. Examples of Class III commodities include, but are not limited to, the following:

- Aerosol, Level 1 (see Chapter 28)
- Combustible fiberboard
- Cork, baled
- Feed, bagged
- Fertilizers, bagged
- Food in plastic containers
- Furniture: wood, natural fiber, upholstered, non-plastic, wood or metal with plastic-padded and covered arm rests
- Glycol in combustible containers not exceeding 25 percent
- Lubricating or hydraulic fluid in metal cans
- Lumber
- Mattresses, excluding foam rubber and foam plastics
- Noncombustible liquids in plastic containers having a capacity of more than 5 gallons (19 L)
- Paints, oil base, in metal cans
- Paper, waste, baled
- Paper and pulp, horizontal storage, or vertical storage that is banded or protected with approved wrap
- Paper in cardboard boxes
- Pillows, excluding foam rubber and foam plastics
- Plastic-coated paper food containers
- Rags, baled
- Rugs, without foam backing
- Sugar, bagged
- Wood, baled
- Wood doors, frames and cabinets
- Yarns of natural fiber and viscose

NFPA 13 - A Class III commodity shall be defined as a product fashioned from wood, paper, natural fibers or Group C plastics with or without cartons, boxes, or crates and with or without pallets. Class III commodities shall be permitted to contain a limited amount (5 percent by weight or volume or less) or Group A or Group B plastics.

Class IV Commodities

IFC - Class IV commodities are Class I, II or III products containing Group A plastics in ordinary corrugated cartons and Class I, II and III products, with Group A plastic packaging, with or without pallets. Group B plastics and free-flowing Group A plastics are also included in this class. The total amount of non-free-flowing Group A plastics shall be in accordance with Section 2303.7.4. Examples of Class IV commodities include, but are not limited to, the following:

- Aerosol, Level 2 (see Chapter 28)

- Alcoholic beverages, exceeding 20-percent but less than 80-percent alcohol, in cans or bottles in cartons.
- Clothing, synthetic or nonviscose
- Combustible metal products (solid)
- Furniture, plastic upholstered
- Furniture, wood or metal with plastic covering and padding
- Glycol in combustible containers (greater than 25 percent and less than 50 percent)
- Linoleum products paints, oil base in combustible containers
- Pharmaceutical, alcoholic elixirs, tonics, etc.
- Rugs, foam back
- Shingles, asphalt
- Thread or yarn, synthetic or nonviscose

NFPA 13 - A Class IV commodity shall be defined as a product, with or without pallets, that meets one of the following criteria: 1) Constructed partially or totally of Group B plastics; 2) Consists of free-flowing Group A plastics materials; 3) Contains within itself or its packaging an appreciable amount (5 percent to 15 percent by weight or 5 percent to 25 percent by volume) of Group A plastics.

High Hazard Commodities

IFC - High-hazard commodities are high-hazard products presenting special fire hazards beyond those of Class I, II, III or IV. Group A plastics not otherwise classified are included in this class. Examples of high-hazard commodities include, but are not limited to, the following:

- Aerosol, Level 3 (see Chapter 28)
- Alcoholic beverages, exceeding 80-percent alcohol, in bottles or cartons
- Commodities of any class in plastic containers in carousel storage
- Flammable solids (except solid combustible metals)
- Glycol in combustible containers (50 percent or greater)
- Lacquers, which dry by solvent evaporation, in metal cans or cartons
- Lubricating or hydraulic fluid in plastic containers
- Mattresses, foam rubber or foam plastics
- Pallets and flats which are idle combustible
- Paper, asphalt, rolled, horizontal storage
- Paper, asphalt, rolled, vertical storage
- Paper and pulp, rolled, in vertical storage which is unbanded or not protected with an approved wrap
- Pillows, foam rubber and foam plastics
- Pyroxylin
- Rubber tires
- Vegetable oil and butter in plastic containers

II. Plastic Commodities (Group A, B and C Plastics)

This list should facilitate the identification in grouping plastic commodities into an A, B, or C group type. If difficulties still arise, contact the product manufacturer for the necessary information required to properly group the type of plastic the facility stores. Submit this information to the Division of the Fire Marshal for record.

Group A Plastics

Group A plastics are plastic materials having a heat of combustion that is much higher than that of ordinary combustibles, and a burning rate higher than that of Group B plastics. Examples of Group A plastics include, but are not limited to, the following:

- ABS (acrylonitrile-butadiene-styrene copolymer)
- Acetal (polyformaldehyde)
- Acrylic (polymethyl methacrylate)
- Butyl rubber EPDM (ethylene propylene rubber)
- FRP (fiberglass-reinforced polyester)
- Natural rubber (expanded)
- Nitrile rubber (acrylonitrile butadiene rubber)
- PET or PETE (polyethylene terephthalate)
- Polybutadiene
- Polycarbonate

- Polyester elastomer
- Polyethylene
- Polypropylene
- Polystyrene (expanded and unexpanded)
- Polyurethane (expanded and unexpanded)
- PVC (polyvinyl chloride greater than 15 percent plasticized, e.g., coated fabric unsupported film)
- SAN (styrene acrylonitrile)
- SBR (styrene butadiene rubber)

Group B Plastics

Group B plastics are plastic materials having a heat of combustion and a burning rate higher than that of ordinary combustibles, but not as high as those of Group A plastics. Examples of Group B plastics include, but are not limited to, the following:

- Cellulosics (cellulose acetate, cellulose acetate butyrate, ethyl cellulose)
- Chloroprene rubber
- Fluoroplastics (ECTFE, ethylene-chlorotrifluoroethyl-ene copolymer; ETFE, ethylene-tetrafluoroethylene copolymer; FEP, fluorinated ethylene-propylene copolymer)
- Natural rubber (non-expanded)
- Nylon (Nylon 6, Nylon 6/6)
- PVC (polyvinyl chloride greater than 5-percent, but not exceeding 15-percent plasticized)
- Silicone rubber

Group C Plastics

Group C plastics are plastic materials having a heat of combustion and a burning rate similar to those of ordinary combustibles. Examples of Group C plastics include, but are not limited to, the following:

- Fluoroplastics (PCTFE, polychlorotrifluoroethylene; PTFE, polytetrafluoroethylene)
- Melamine (melamine formaldehyde) henol VC (polyvinyl chloride, rigid or plasticized less than 5 percent, e.g., pipe, pipe fittings)
- PVDC (polyvinylidene chloride)
- PVDF (polyvinylidene fluoride)
- PVF (polyvinyl fluoride)
- Urea (urea formaldehyde)Mixed Commodities

III. Mixed Commodities

Unless otherwise specified in Chapter 23 of the International Fire Code, this section refers to mixed commodities involving Group A plastics only. Group C plastics are considered Class III commodities and Group B plastics are considered Class IV commodities, unless otherwise specified.

With that said, facilities typically contain some sort of plastic within their storage practices. The plastic may be whole or part of the product itself or incorporated within the packaging or storing. Regardless, when plastics are found within Class I, II, III or IV commodities, it is referred to mixed commodities. As described previously, certain commodity classifications permit certain amount or percentages of specific plastics without changing the commodity classification. The following will provide guidance in determining the commodity classification when mixed commodities are present.

The percentage of plastics is a significant factor. The difference between percentages may be the difference in fire sprinklers within the facility or not. Therefore, an accurate percentage of plastic materials within the facility is required. Please note that this percentage of plastics is based on individual pallet loads or cartons and is a function of the volume or the weight of the packaging method for both expanded and non expanded plastics. The definitions for each are below.

PLASTICS, NON EXPANDED Those plastics with high densities, solid, or not otherwise categorized as expanded, such as polyethylene film, polystyrene toys, polyester and polystyrene plastic tote bins, polyethylene 55-gallon drums or smaller containers, etc.

PLASTICS, EXPANDED (FOAMED OR CELLULAR) Those plastics, the density of which is reduced by the presence of numerous small cavities (cells), interconnecting or not, dispersed throughout their mass. Examples include Styrofoam peanuts and cups. (IFC, NFPA 13)

Two of three percentages are needed to accurately determine the correct commodity classification of mixed commodities:

- 1) Percent by weight of expanded plastic
- or**
- 2) Percent by volume of expanded plastic
- and**
- 3) Percent by weight of unexpanded plastic

Percent by weight of expanded plastic. Based on the pallet load or per carton, this is the percentage of weight of expanded plastics as compared to the total weight of the pallet or carton.

Percent by volume of expanded plastic. Based on the pallet load or per carton, this is the percentage of volume of expanded plastics as compared to the total volume of the pallet or carton.

Percent by weight of unexpanded plastic. Based on pallet load or per carton, this is the percentage of weight of unexpanded plastics as compared to the total volume of the pallet or carton.

It is important to note that the above percentages must all be based on either the pallet load or per carton. This means that one percentage based on the pallet load and another percentage based on the carton is not acceptable. All percentages must have the same common denominator so to speak.

Take a pallet load of bicycles for example. The amount of plastics (pedals, reflector, tires, handle bar grips, etc.) is actually a very limited as compared to the metal (non-combustible) portions of the bicycle. The percentage of plastics in the pallet load of bicycles may be 25% or ¼ of the total weight or volume of the pallet. In another example of storing computers, the percentage of plastics may be as high as 75%, due to computers being mostly plastic with some exceptions. Figure 2301.7.4 below is taken from the 2009 International Fire Code to assist in determining the percentage of Group A plastics being stored. Note, this figure is only used when Group A plastics only are involved. Contact the Division of the Fire Marshal with any questions.

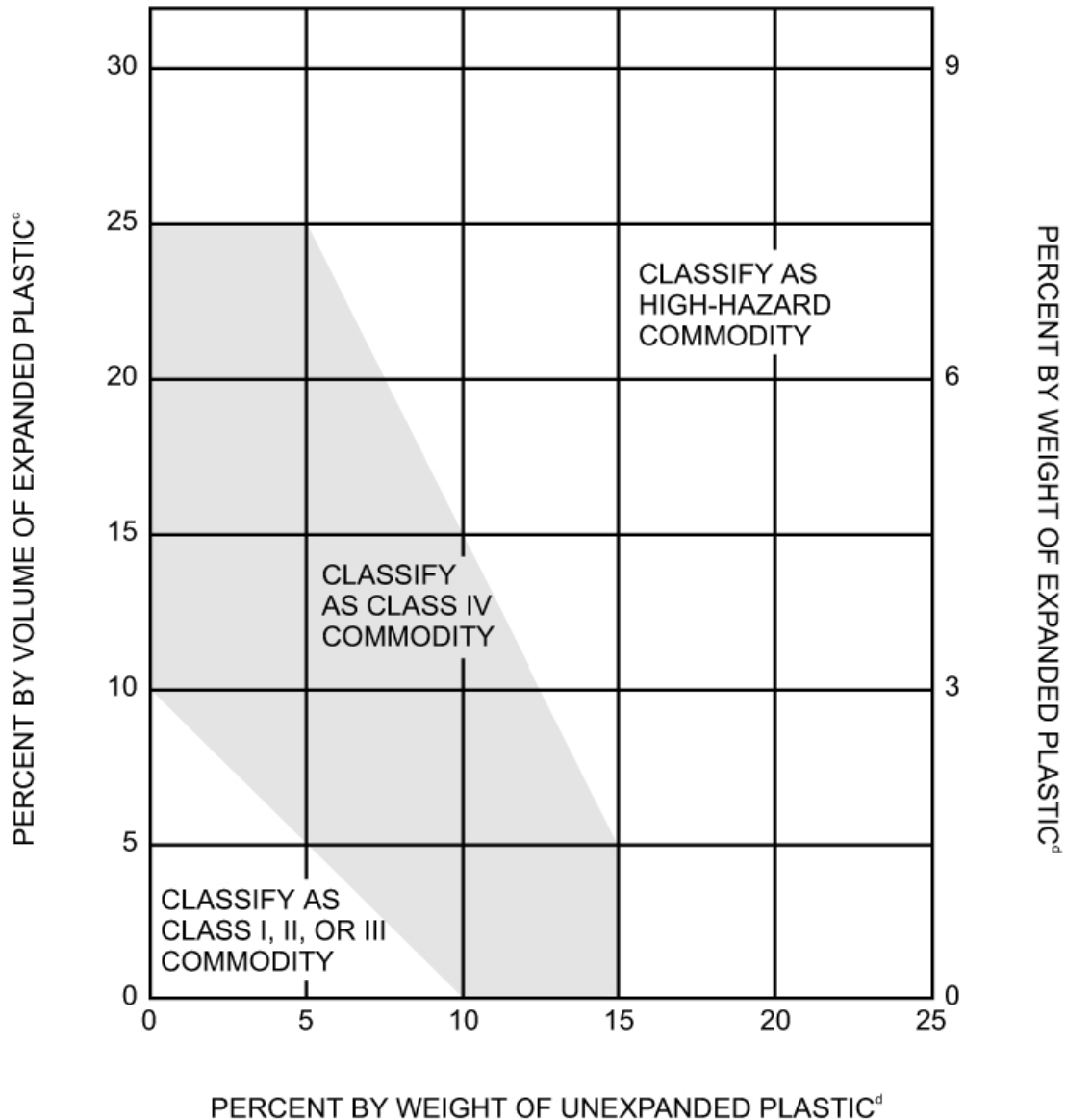


Figure 2302.7.4 MIXED COMMODITIES^{a,b}

- a. This figure is intended to determine the commodity classification of a mixed commodity in a package, carton or on a pallet where plastics are involved.
- b. The following is an example of how to apply the figure: A package containing a Class III commodity has 12-percent Group A expanded plastic by volume. The weight of the unexpanded Group A plastic is 10 percent. This commodity is classified as a Class IV commodity. If the weight of the unexpanded plastic is increased to 14 percent, the classification changes to a high-hazard commodity.

c. Percent by volume =
$$\frac{\text{Volume of plastic in pallet load}}{\text{Total volume of pallet load, including pallet}}$$

d. Percent by weight =
$$\frac{\text{Weight of plastic in pallet load}}{\text{Total weight of pallet load, including pallet.}}$$

COMMODITY CLASSIFICATION EXAMPLES

Alphabetized Listing of Commodity Classes

Commodity	Commodity Class	Commodity	Commodity Class
Aerosols		Candy	
Cartoned or uncartoned		Packaged, cartoned	Class III
- Level 1	Class III	Canned Foods	
Alcoholic Beverages		In ordinary cartons	Class I
Cartoned or uncartoned		Cans	
- Up to 20 percent alcohol in metal, glass, or ceramic containers	Class I	Metal	
- Up to 20 percent alcohol in wood containers	Class II	- Empty	Class I
- Exceeding 20 percent but less than 80 percent alcohol in can or bottles	Class IV	Carpet Tiles	
Ammunition		Cartoned	Group A plastics
Small arms, shotgun		Cartons	
- Packaged, cartoned	Class IV	Corrugated	
Appliances, Major (e.g., stoves, refrigerators)		- Unassembled (neat piles)	Class III
- Not packaged, no appreciable plastic exterior trim	Class I	- Partially assembled	Class IV
- Corrugated, cartoned (no appreciable plastic trim)	Class II	Wax coated, single walled	Group A plastics
Baked Goods		Cement	
Cookies, cakes, pies		Bagged	Class I
- Frozen, packaged in cartons ¹	Class II	Cereals	
- Packaged, in cartons	Class III	Packaged, cartoned	Class III
Batteries		Charcoal	
Dry cells (nonlithium or similar exotic metals)		Bagged	
- Packaged in cartons	Class I	- Standard	Class III
- Blister-packed in cartons	Class II	Cheese	
Automobile		- Packaged, cartoned	Class III
- Filled ²	Class I	- Wheels, cartoned	Class III
Truck or larger		Chewing Gum	
- Empty or filled ²	Group A plastics	Packaged, cartoned	Class III
Beans		Chocolate	
Dried		Packaged, cartoned	Class III
- Packaged, cartoned	Class III	Cloth	
Bottles, Jars		Cartoned and not cartoned	
Empty, cartoned		- Natural fiber, viscose	Class III
- Glass	Class I	- Synthetic ⁵	Class IV
- Plastic PET (polyethylene terephthalate)	Class IV	Cocoa Products	
Filled noncombustible powders		Packaged, cartoned	Class III
- Plastic PET	Class II	Coffee	
- Glass, cartoned	Class I	- Canned, cartoned	Class I
- Plastic, cartoned [less than 1 gal (3.8 L)]	Class IV	- Packaged, cartoned	Class III
- Plastic, uncartoned (other than PET), any size	Group A plastics	Coffee Beans	
- Plastic, cartoned or exposed [greater than 1 gal (3.8 L)]	Group A plastics	Bagged	Class III
- Plastic, solid plastic crates	Group A plastics	Cotton	
- Plastic, open plastic crates	Group A plastics	Packaged, cartoned	Class III
Filled noncombustible liquids		Diapers	
- Glass, cartoned	Class I	- Cotton, linen	Class III
- Plastic, cartoned [less than 5 gal (18.9 L)]	Class I	- Disposable with plastics and nonwoven fabric (in cartons)	Class IV
- Plastic, open or solid plastic crates ³	Group A plastics	- Disposable with plastics and nonwoven fabric (uncartoned), plastic wrapped	Group A plastics
- Plastic, PET	Class I	Dried Foods	
Boxes, Crates		Packaged, cartoned	Class III
- Empty, wood, solid walls	Class II	Fertilizers	
- Empty, wood, slatted ⁴	Outside of scope	Bagged	
Bread		- Phosphates	Class I
Wrapped cartoned	Class III	- Nitrates	Class II
Butter		Fiberglass Insulation	
Whipped spread	Class III	- Paper-backed rolls, bagged or unbagged	Class IV
Candles		File Cabinets	
Packaged, cartoned		Metal	
- Treat as expanded plastic	Group A plastics	- Cardboard box or shroud	Class I
		Fish or Fish Products	
		Frozen	
		- Nonwaxed, nonplastic packaging	Class I
		- Waxed-paper containers, cartoned	Class II
		- Boxed or barreled	Class II
		- Plastic trays, cartoned	Class III
		Canned	
		- Cartoned	Class I

Salt	
- Bagged	Class I
- Packaged, cartoned	Class II
Shingles	
- Asphalt-coated fiberglass	Class III
- Asphalt-impregnated felt	Class IV
Shock Absorbers	
- Metal dust cover	Class II
- Plastic dust cover	Class III
Signatures	
Books, magazines	
- Solid array on pallet	Class II
Skis	
- Wood	Class III
- Foam core	Class IV
Stuffed Toys	
Foam or synthetic	Group A plastics
Syrup	
- Drummed (metal containers)	Class I
- Barreled, wood	Class II
Textiles	
Natural fiber clothing or textile products	Class III
Synthetics (except rayon and nylon)	
— 50/50 blend or less	
- Thread, yarn on wood or paper spools	Class III
- Fabrics	Class III
- Thread, yarn on plastic spools	Class IV
- Baled fiber	Group A plastics
Synthetics (except rayon and nylon)	
— greater than 50/50 blend	
- Thread, yarn on wood or paper spools	Class IV
- Fabrics	Class IV
- Baled fiber	Group A plastics
- Thread, yarn on plastic spools	Group A plastics
Rayon and nylon	
- Baled fiber	Class IV
- Thread, yarn on wood or paper spools	Class IV
- Fabrics	Class IV
- Thread, yarn on plastic spools	Group A plastics
Tobacco Products	
In paperboard cartons	Class III
Transformers	
Dry and oil filled	Class I
Vinyl-Coated Fabric	
Cartoned	Group A plastics
Vinyl Floor Coverings	
- Tiles in cartons	Class IV
- Rolled	Group A plastics
Wax-Coated Paper	
Cups, plates	
- Boxed or packaged inside cartons	Class IV
(emphasis on packaging)	
- Loose inside large cartons	Group A plastics
Wax	
Paraffin/petroleum wax, blocks, cartoned	Group A plastics

Wire	
- Bare wire on metal spools on wood skids	Class I
- Bare wire on wood or cardboard spools	Class II
on wood skids	
- Bare wire on metal, wood, or cardboard	Class II
spools in cardboard boxes on wood skids	
- Single- or multiple-layer PVC-covered	Class II
wire on metal spools on wood skids	
- Insulated (PVC) cable on large wood or	Class II
metal spools on wood skids	
- Bare wire on plastic spools in cardboard	Class IV
boxes on wood skids	
- Single- or multiple-layer PVC-covered	Class IV
wire on plastic spools in cardboard boxes	
on wood skids	
- Single, multiple, or power cables (PVC)	Class IV
on large plastic spools	
- Bulk storage of empty plastic spools	Group A plastics
Wood Products	
- Solid piles — lumber, plywood,	Class II
particleboard, pressboard (smooth ends	
and edges)	
- Spools (empty)	Class III
- Toothpicks, clothespins, hangers in	Class III
cartons	
- Doors, windows, wood cabinets, and	Class III
furniture	
- Patterns	Class IV

¹ The product is presumed to be in a plastic-coated package in a corrugated carton. If packaged in a metal foil, it can be considered Class I.

² Most batteries have a polypropylene case and, if stored empty, should be treated as a Group A plastic. Truck batteries, even where filled, should be considered a Group A plastic because of their thicker walls.

³ As the openings in plastic crates become larger, the product behaves more like a Class III commodity. Conversely, as the openings become smaller, the product behaves more like a plastic.

⁴ These items should be treated as idle pallets.

⁵ Tests clearly indicate that a synthetic or synthetic blend is considered greater than Class III.

⁶ When liquor is stored in glass containers in racks, it should be considered a Class III commodity; where it is palletized, it should be considered a Class IV commodity.

Examples of Class I Commodities

Alcoholic Beverages

Cartoned or uncartoned

- Up to 20 percent alcohol in metal, glass, or ceramic containers

Appliances, Major (e.g., stoves, refrigerators)

- Not packaged, no appreciable plastic exterior trim

Batteries

Dry cells (nonlithium or similar exotic metals)

- Packaged in cartons

Automobile

- Filled*

Bottles, Jars

Empty, cartoned

- Glass

Filled noncombustible liquids

- Glass, cartoned

- Plastic, cartoned [less than 5 gal (18.9 L)]

- Plastic, PET

Filled noncombustible powders

- Glass, cartoned

Canned Foods
 In ordinary cartons
 Cans
 Metal
 - Empty
 Cement
 Bagged
 Coffee
 Canned, cartoned
 Fertilizers
 Bagged
 - Phosphates
 File Cabinets
 Metal
 - Cardboard box or shroud
 Fish or Fish Products
 Frozen
 - Nonwaxed, nonplastic packaging
 Canned
 - Cartoned
 Frozen Foods
 Nonwaxed, nonplastic packaging
 Fruit
 Fresh
 - Nonplastic trays or containers
 - With wood spacers
 Ice Cream
 Meat, Meat Products
 - Bulk
 - Canned, cartoned
 - Frozen, nonwaxed, nonplastic containers
 Metal Desks
 - With plastic tops and trim
 Milk
 - Nonwaxed-paper containers
 - Waxed-paper containers
 - Plastic containers
 Motors
 - Electric
 Nuts
 - Canned, cartoned
 Paints
 Friction-top cans, cartoned
 - Water-based (latex)
 Plastic Containers
 - Noncombustible liquids or semiliquids in plastic containers
 less than 5 gal (18.9 L) capacity
 Poultry Products
 - Canned, cartoned
 - Frozen, nonwaxed, nonplastic containers
 Salt
 Bagged
 Syrup
 Drummed (metal containers)
 Transformers
 Dry and oil filled
 Wire
 Bare wire on metal spools on wood skids
 *Most batteries have a polypropylene case and, if stored empty,
 should be treated as a Group A plastic. Truck batteries, even
 where filled, should be considered a Group A plastic because of
 their thicker walls.

Examples of Class II Commodities

Alcoholic Beverages
 Up to 20 percent alcohol in wood containers
 Appliances, Major (e.g., stoves)
 Corrugated, cartoned (no appreciable plastic trim)

Baked Goods
 Cookies, cakes, pies
 - Frozen, packaged in cartons*
 Batteries
 Dry cells (nonlithium or similar exotic metals) in blister pack in
 cartons
 Bottles, Jars
 Filled noncombustible powders
 - Plastic PET
 Boxes, Crates
 Empty, wood, solid walls
 Fertilizers
 Bagged
 - Nitrates
 Fish or Fish Products
 Frozen
 - Waxed-paper containers, cartoned
 - Boxed or barreled
 Frozen Foods
 Waxed-paper containers, cartoned
 Leather Hides
 Baled
 Light Fixtures
 Nonplastic
 - Cartoned
 Marble
 Artificial sinks, countertops
 - Cartoned, crated
 Meat, Meat Products
 - Frozen, waxed-paper containers
 - Frozen, expanded plastic trays
 Pharmaceuticals
 Pills, powders
 - Glass bottles, cartoned
 Nonflammable liquids
 - Glass bottles, cartoned
 Photographic Film
 - Motion picture or bulk rolls of film in polycarbonate,
 polyethylene, or metal cans; polyethylene bagged in
 cardboard boxes
 Plastic Containers
 Noncombustible liquids or semiliquids (such as ketchup) in
 plastic containers with nominal wall thickness of ¼ in. (6.4
 mm) or less and larger than 5 gal (18.9 L) capacity
 Poultry Products
 Frozen (on paper or expanded plastic trays)
 Powders (ordinary combustibles — free flowing)
 In paper bags (e.g., flour, sugar)
 Salt
 Packaged, cartoned
 Shock Absorbers
 Metal dust cover
 Signatures
 Book, magazines
 - Solid array on pallet
 Syrup
 Barreled, wood
 Wire
 - Bare wire on wood or cardboard spools on wood skids
 - Bare wire on metal, wood, or cardboard spools in cardboard
 boxes on wood skids
 - Single- or multiple-layer PVC-covered wire on metal spools
 on wood skids
 - Insulated (PVC) cable on large wood or metal spools on
 wood skids
 Wood Products
 Solid piles
 - Lumber, plywood, particle board, pressboard (smooth ends
 and edges)

*The product is in a plastic-coated package in a corrugated carton. If packaged in a metal foil, it can be considered Class I.

Examples of Class III Commodities

Aerosols
 Cartoned or uncartoned
 - Level 1

Baked Goods
 Cookies, cakes, pies
 - Packaged, in cartons

Beans
 Dried
 - Packaged, cartoned

Bread
 Wrapped, cartoned

Butter
 Whipped spread

Candy
 Packaged, cartoned

Cartons
 Corrugated
 - Unassembled (neat piles)

Cereals
 Packaged, cartoned

Charcoal
 Bagged
 - Standard

Cheese
 - Packaged, cartoned
 - Wheels, cartoned

Chewing Gum
 Packaged, cartoned

Chocolate
 Packaged, cartoned

Cloth
 Cartoned and not cartoned
 - Natural fiber, viscose

Cocoa Products
 Packaged, cartoned

Coffee
 Packaged, cartoned

Coffee Beans
 Bagged

Cotton
 Packaged, cartoned

Diapers
 Cotton, linen

Dried Foods
 Packaged, cartoned

Fish or Fish Products
 Frozen
 - Plastic trays, cartoned

Frozen Foods
 Plastic trays

Furniture
 Wood
 - No plastic coverings or foam plastic cushioning

Grains — Packaged in Cartons
 - Barley
 - Rice
 - Oats

Margarine
 Up to 50 percent oil (in paper or plastic containers)

Mattresses
 Standard (box spring)

Nuts
 - Packaged, cartoned
 - Bagged

Paper Products
 Books, magazines, stationery, plastic-coated paper food containers, newspapers, cardboard games, cartoned tissue products

Paper, Rolled
 In racks or on side
 - Medium or heavyweight

Photographic Film
 - 35-mm in metal film cartridges in polyethylene cans in cardboard boxes
 - Paper, in sheets, bagged in polyethylene, in cardboard boxes

PVC (polyvinyl chloride)
 - Flexible (e.g., cable jackets, plasticized sheets)
 - Rigid (e.g., pipe, pipe fittings)
 - Bagged resins

Rags
 Baled
 - Natural fibers

Shingles
 Asphalt-coated fiberglass

Shock Absorbers
 Plastic dust cover

Skis
 Wood

Textiles
 Natural fiber clothing or textile products
 Synthetics (except rayon and nylon) —
 50/50 blend or less
 - Thread, yarn on wood or paper spools
 - Fabrics

Tobacco Products
 In paperboard cartons

Wood Products
 - Spools (empty)
 - Toothpicks, clothespins, hangers in cartons
 - Doors, windows, wood cabinets, and furniture

Examples of Class IV Commodities

Ammunition
 Small arms, shotgun
 - Packaged, cartoned

Bottles, Jars
 - Plastic PET (polyethylene terephthalate)
 Empty, cartoned
 Filled noncombustible powders
 - Plastic, cartoned [less than 1 gal (3.8 L)]

Cartons
 Corrugated
 - Partially assembled

Cloth
 Cartoned and not cartoned
 - Synthetic¹

Diapers
 Disposable with plastics and nonwoven fabric (in cartons)

Fiberglass Insulation
 - Paper-backed rolls, bagged or unbagged

Furniture
 Wood
 - With plastic coverings

Liquor
 100 proof or less, 1 gal (3.8 L) or less, cartoned
 - Glass (palletized)²
 - Plastic bottles

Matches
 Packaged, cartoned
 - Paper

Nail Polish
 1-oz to 2-oz (29.6-ml to 59.1-ml) glass, cartoned

Paints
 Friction-top cans, cartooned
 - Oil based
 Paper, Rolled
 In racks
 - Lightweight
 Paper, Waxed
 Packaged in cartons
 Pharmaceuticals
 Pills, powders
 - Plastic bottles, cartoned
 Photographic Film
 - Rolls in polycarbonate plastic cassettes, bulk wrapped in cardboard boxes
 PVA (polyvinyl alcohol) Resins
 Bagged
 Rags
 Baled
 - Synthetic fibers
 Rubber
 Natural, blocks in cartons
 Shingles
 Asphalt-impregnated felt
 Skis
 Foam core
 Textiles
 Synthetics (except rayon and nylon) — 50/50 blend or less
 - Thread, yarn on plastic spools
 Synthetics (except rayon and nylon) — greater than 50/50 blend
 - Thread, yarn on wood or paper spools
 - Fabrics
 Rayon and nylon
 - Baled fiber
 - Thread, yarn on wood or paper spools
 - Fabrics
 Vinyl Floor Coverings
 Tiles in cartons
 Wax-Coated Paper
 Cups, plates
 Wire
 - Boxed or packaged inside cartons (emphasis is on packaging)
 - Bare wire on plastic spools in cardboard boxes on wood skids
 - Single- or multiple-layer PVC-covered wire on plastic spools in cardboard boxes on wood skids
 - Single, multiple, or power cables (PVC) on large plastic spools
 Wood Products
 Patterns
¹ Tests clearly indicate that a synthetic or synthetic blend is considered greater than Class III.
² Where liquor is stored in glass containers in racks, it should be considered a Class III commodity; where it is palletized, it should be considered a Class IV commodity.

Examples of Group A Plastic Commodities

Batteries
 Truck or larger
 - Empty or filled¹

Bottles, Jars
 Empty, cartooned
 - Plastic (other than PET), any size
 Filled noncombustible liquids
 - Plastic, open or solid plastic crates²
 Filled noncombustible powders
 - Plastic, cartoned or uncartoned [greater than 1 gal (3.8 L)]
 - Plastic, solid plastic crates
 - Plastic, open plastic crates
 Candles
 Packaged, cartooned
 - Treat as expanded plastic
 Carpet Tiles
 Cartoned
 Cartons
 Wax coated, single walled
 Diapers
 Disposable with plastics and nonwoven fabric (uncartoned), plastic wrapped
 Furniture
 Wood
 - With foam plastic cushioning
 Lighters
 Butane
 - Blister-packed, cartoned
 Margarine
 Between 50 percent and 80 percent oil (in any packaging)
 Matches
 Packaged, cartooned
 - Wood
 Mattresses
 Foam (in finished form)
 Milk
 Containers in plastic crates
 Nail Polish
 1-oz to 2-oz (29.6-ml to 59.1-ml) plastic bottles, cartoned
 Paper Products
 Tissue products, uncartoned and plastic wrapped
 Plastic Containers
 - Combustible or noncombustible solids in plastic containers and empty plastic containers
 - Noncombustible liquids or semiliquids (such as ketchup) in plastic containers with nominal wall thickness greater than 1/4 in. (6.4 mm) and larger than 5 gal (18.9 L) capacity
 Polyurethane
 Cartoned or uncartoned expanded
 Rubber
 Synthetic
 Stuffed Toys
 Foam or synthetic
 Textiles
 Synthetics (except rayon and nylon) — 50/50 blend or less
 - Baled fiber
 Synthetics (except rayon and nylon)— greater than 50/50 blend
 - Baled fiber
 - Thread, yarn on plastic spools
 Rayon and nylon
 - Thread, yarn on plastic spools
 Vinyl-Coated Fabric
 Cartoned
 Vinyl Floor Coverings
 Rolled
 Wax-Coated Paper
 Cups, plates
 - Loose inside large cartons
 Wax
 Paraffin/petroleum wax, blocks, cartoned

Wire

Bulk storage of empty plastic spools

¹ Most batteries have a polypropylene case and, if stored empty, should be treated as a Group A plastic. Truck batteries, even when filled, should be considered a Group A plastic because of their thicker walls.

² As the openings in plastic crates become larger, the product behaves more like Class III. Conversely, as the openings become smaller, the product makeup behaves more like a plastic.