CHEMICAL STRATEGIES, INC.

Flammable Liquids

Classes & Categories

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FLAMMABLE LIQUID CLASSIFICATION

National Fire Protection Association (NFPA)

Flammable liquids are defined by the National Fire Protection Association (NFPA), as a liquid with a closed-cup flash point less than 100°F (38°C) and a combustible liquid is a liquid with a closed-cup flash point greater than or equal to 100°F (38°C). NFPA has six classes of flammable liquids.

NFPA CLASSIFICATION OF FLAMMABLE LIQUIDS			
FLAMMABLE LIQUIDS	*Flammable: A liquid having a flash point below 100°F (38°C)*		
	Class IA	*Closed-Cup Flash Point:* Below 73°F (23°C) *Boiling Point:* Below 100°F (38°C)	Diethyl Ether, Pentane, Ligroin, Heptane, Petroleum Ether
	Class IB	*Closed-Cup Flash Point:* Below 73°F (23°C) *Boiling Point:* At or above 100°F (38°C)	Acetone, Benzene, Cyclohexane, Isopropyl Alcohol, Methyl Ethyl Ketone, Toluene, Ethanol
	Class IC	*Closed-Cup Flash Point:* At or above 73°F (23°C) and below 100°F (38°C)	Xylene, Naphtha, Turpentine,
COMBUSTIBILE LIQUIDS	*Combustible: A liquid having a flash point at or above 100°F (38°C)*		
	Class II	*Closed-Cup Flash Point:* At or above 100°F (38°C) and below 140°F (60°C)	Camphor Oil, Diesel Fuel, Pine Tar, Stoddard Solvent
	Class IIIA	*Closed-Cup Flash Point:* At or above 140°F (60°C) and below 200°F (93°C)	Aniline, Benzaldehyde, Butyl Cellosolve, Nitrobenzene, Pine Oil, Formaldehyde
	Class IIIB	*Closed-Cup Flash Point:* At or above 200°F (93°C)	Animal Oils, Ethylene Glycol, Glycerin, Lubricating, Quenching, and Transformer Oils, Triethanolamine, Benzyl Alcohol, Hydraulic Fluids, Vegetable Oils

FLAMMABLE LIQUID CLASSIFICATION

National Fire Protection Association (OSHA)

The **Occupational Safety and Health Administration (OSHA)** defines flammable liquids as, liquid with a closed-cup flashpoint less than 200°F (93°C). OSHA has four categories of flammable liquids.

OSHA FLAMMABLE LIQUID CATEGORIES			
FLAMMABLE LIQUIDS	*Flammable Liquid: A liquid having a flash point below 200°F (93°C)*		
	Category 1	*Closed-Cup Flash Point:* Below 73.4°F (23°C) *Boiling Point:* Below 95°F (35°C)	Diethyl Ether, Pentane, Ligroin, Heptane, Petroleum Ether
	Category 2	*Closed-Cup Flash Point:* Below 73.4°F (23°C) *Boiling Point:* At or above 95°F (35°C)	Acetone, Benzene, Cyclohexane, Isopropyl Alcohol, Methyl Ethyl Ketone, Toluene, Ethanol
	Category 3*	*Closed-Cup Flash Point:* At or above 73.4°F (23°C) and below 140°F (60°C)	Xylene, Naphtha, Turpentine, Camphor Oil, Diesel Fuel, Pine Tar, Stoddard Solvent
	*When a Category 3 liquid with a flash point at or above 100°F (37.8°C) is heated for use to within 30°F (16.7°C) of its flash point, it shall be handled in accordance with the requirements for a Category 3 liquid with a flash point below 100°F (37.8°C).		
	Category 4*	*Closed-Cup Flash Point:* At or above 140°F (60°C) and below 200°F (93°C)	Aniline, Benzaldehyde, Butyl Cellosolve, Nitrobenzene, Pine Oil, Formaldehyde, Animal Oils, Ethylene Glycol, Glycerin, Lubricating, Quenching, and Transformer Oils, Triethanolamine, Benzyl Alcohol, Hydraulic Fluids, Vegetable Oils
	*When a Category 4 flammable liquid is heated for use to within 30°F (16.7°C) of its flash point, it shall be handled in accordance with the requirements for a Category 3 liquid with a flash point at or above 100°F (37.8°C). When liquid with a flash point greater than 199.4°F (93°C) is heated for use to within 30°F (16.7°C) of its flash point, it shall be handled in accordance with the requirements for a Category 4 flammable liquid.		

FLAMMABLE LIQUIDS:
Classes & Categories

The **National Fire Protection Association (NFPA)** and the **Occupational Safety and Health Administration (OSHA)** have different definitions to what classifies as a flammable liquid. See below for a breakdown and comparison of the different classification systems used by each.

CLASSIFICATION OF FLAMMABLE LIQUIDS

FLAMMABLE LIQUIDS (OSHA)	FLAMMABLE LIQUIDS (NFPA)	**Category 1**	Class IA	***Closed-Cup Flash Point:*** *NFPA*: Below 73°F (23°C) *OSHA*: Below 73.4°F (23°C) ***Boiling Point:*** *NFPA*: Below 100°F (38°C) *OSHA*: Below 95°F (35°C)	Diethyl Ether, Pentane, Ligroin, Heptane, Petroleum Ether
		Category 2	Class IB	***Closed-Cup Flash Point:*** *NFPA*: Below 73°F (23°C) *OSHA*: Below 73.4°F (23°C) ***Boiling Point:*** *NFPA*: At or above 100°F (38°C) *OSHA*: At or above 95°F (35°C)	Acetone, Benzene, Cyclohexane, Isopropyl Alcohol, Methyl Ethyl Ketone, Toluene, Ethanol
		Category 3*	Class IC	***Closed-Cup Flash Point:*** *NFPA*: At or above 73°F (23°C) and below 100°F (38°C) *OSHA*: At or above 73.4°F (23°C) and below 140°F (60°C)	Xylene, Naphtha, Turpentine
	COMBUSTIBLE LIQUIDS (NFPA)		Class II	***Closed-Cup Flash Point:*** *NFPA*: At or above 100°F (38°C) and below 140°F (60°C)	Camphor Oil, Diesel Fuel, Pine Tar, Stoddard Solvent
		**When a Category 3 liquid with a flash point at or above 100°F (37.8°C) is heated for use to within 30°F (16.7°C) of its flash point, it shall be handled in accordance with the requirements for a Category 3 liquid with a flash point below 100°F (37.8°C).*			
		Category 4*	Class IIIA	***Closed-Cup Flash Point:*** *NFPA:* At or above 140°F (60°C) and below 200°F (93°C) *OSHA*: At or above 140°F (60°C) and below 200°F (93°C)	Aniline, Benzaldehyde, Butyl Cellosolve, Nitrobenzene, Pine Oil, Formaldehyde
			Class IIIB	***Closed-Cup Flash Point:*** At or above 200°F (93°C)	Animal Oils, Ethylene Glycol, Glycerin, Lubricating, Quenching, and Transformer Oils, Triethanolamine, Benzyl Alcohol, Hydraulic Fluids, Vegetable Oils
		**When a Category 4 flammable liquid is heated for use to within 30°F (16.7°C) of its flash point, it shall be handled in accordance with the requirements for a Category 3 liquid with a flash point at or above 100°F (37.8°C). When liquid with a flash point greater than 199.4°F (93°C) is heated for use to within 30°F (16.7°C) of its flash point, it shall be handled in accordance with the requirements for a Category 4 flammable liquid.*			

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