

## Flash Point Testing - Some Industry Applications

Industry:	Application:	Temperature Range:	Type & Standard:
Adhesives & Sealants	Testing esters and ketones for flammability classification for transport regulations. Also certification for Defence and Civil Aviation Authorities and Quality Audits to relevant national/international standards.	Up to 150°C	Manual PMCC Method A, Abel, Setaflash
Aviation & Aircraft	QC of incoming fuels and oils. H&S and transport. Specification conformance.	30°C to 399°C	Automatic PMCC Method A & B Manual PMCC, Abel
Biodiesel	Flash point testing checks that chemicals, such as methanol, used in the manufacturing process are below safe levels.	130°C	PMCC
Bitumen & Asphalt	Flash point data is used for shipping and safety regulations as well as to indicate the possible presence of more volatile or flammable compounds in an otherwise relatively non-volatile or non-flammable material.	>200°C	Cleveland
Chemicals	Testing solvents used in production, H&S of finished product and safety classification for transport regulations.	Below 200°C	Automatic PMCC Method A, Cleveland Open Cup, Manual PMCC Method A,, Cleveland Open Cup, Abel
Chemical Products (polishes, cleaners)	Flash point criteria are specified in most products at R&D stage. Further tests are carried out for H&S and flammability classification for transport regulations.	30°C to 150°C	Manual PMCC Method A, Abel
Crude	Flash point testing provides an indication about the volatility of crude oil and therefore how safely it may be extracted, transported and stored, and the potential costs involved.	Below 0°C	PMCC, Tag, Cleveland, Setaflash
Edible Oils & Fats	Consumers and food manufacturers use these products at elevated temperatures during cooking and processing and hence flash point is checked to ensure refining processes and safety limits are correctly mandated.	Up to 30°C	Cleveland
Energy & Power	Turbine and transformer oils are routinely tested for flash point to confirm product integrity from contamination that may affect performance or safety.	Up to 20°C	PMCC, Tag, Cleveland, Setaflash
Formulated Pesticides	Used for flammability classification for transport regulations and R&D purposes.	Up to 150°C	Manual PMCC Method A, Abel, Setaflash
Lubricants	OC and research of lubes. Used oil analysis to detect evaporation/contamination by volatiles under working conditions.	30°C to 399°C	Automatic PMCC Method A & B
Oil & Gas Rigs	Test quality of samples and for sump contamination of pumphead machinery.	30°C to 399°C	Automatic & Manual PMCC Method A
Oil Treatment/Recovery	QC on base oils and checking contamination of used/recovered oils and fuels. Used oils are checked prior to storage. Used oils are checked for storage and re-refining. H&S and transport regulations apply.	30°C to 399°C	Automatic PMCC Method A & B
Paints & Varnishes	Research, QC and safety. Flammability classification for transport regulations. Recommended for water-borne paints.	Below 100°C	Automatic PMCC Method A, Manual PMCC, Abel
Perfumes, Flavours & Fragrances	Tests on solvent/water mixtures. Flammability classification for transport regulations and safety in use. Material tends to be expensive so Setaflash 2ml sample size highly desirable.	Ambient to 110°C	Automatic PMCC Method A, Manual PMCC, Setaflash
Petroleum & Derivatives Refining	Testing for QA/contamination where product is pumped through multi-product pipeline. Also used for H&S and transport regulations.	30°C to 399°C	Automatic PMCC Method A, Manual PMCC, Setaflash
Pharmaceutical	Flash point tests are used by Pharamceutical companies to check stated flash points on raw materials and finished products for consumer and regulatory requirements	<100°C	PMCC, Tag Setaflash
Printing Inks	The lowest flash point solvent used is taken as the safety benchmark for flammability classification for transport regulations.	Below 100°C	Manual PMCC Method A, Abel
Road Trucker/Shipping Terminals	QC of storage tanks and deliveries. Safety classification for transport regulations.	30°C to 399°C	Automatic PMCC Method A & B, Manual PMCC, Abel
Soap & Synthetic Detergents	Used for research and testing of solvents in cosmetics and aftershaves. Used for QA, flammability classification for transport, H&S and R&D.	Under 200°C	Manual PMCC Method A, Abel, Setaflash
Synthetic Resins	Resins are used for paints, varnish, glue etc. Checked for QC, H&S and safety classification for transport regulations.	15°C to 150°C	Automatic PMCC Method A, Manual PMCC, Abel
Transport Regulations	Flammability classification for road, rail, air and sea.	Extremely flammable <0°C Highly flammable <21°C Flammable <55°C	Setaflash
Waste Disposal	Tests used to classify waste prior to disposal.	Hexane <100°C Pure Oil >300°C	Manual PMCC Method A, Abel