

FLASHPOINT DETERMINATION OF TRANSPORTED GOODS WITH MINIFLASH

Introduction:

The flashpoint of transported goods like flavors, fragrances, chemicals, paints and varnish is a value for the classification of a sample. Depending on the flashpoint, the sample must be labeled and packed according to the transport regulations.

References:

In the flavors and fragrances industry MINIFLASH is already worldwide the number one. Companies like IFF, Haarmann&Reimer and Firmenich cannot do without the obvious benefits of MINIFLASH anymore. But also in refineries and in the paint and varnish industry, where a safe and easy handling and the fast cleaning are very important our customers like Shell, Mobil, Petrobras, Bayer, Sika, Silesia etc. are very happy with our instrument.

Standard:

MINIFLASH is a standardized flashpoint tester according to ASTM D6450 & D7094 and is US D.O.T. approved for transportation/classification. Further, the instrument gives comparable values as Pensky Martens or Abel Pensky flashpoint testers, what is shown in the following.

Comparison measurements:

In order to show the perfect correlation to Pensky Martens, measurements were performed on several different liquids.

substance	LITERATURE	MINIFLASH	PM
p-Xylene	26	26	26
Isobutanol	29	30	28
2-Butanol	23	23	17
Butanol	34	36	36
1,2,3 Trimethylb.	53	52	53
acetic acid	40	41	39
n-Dodecane	74	78	80
Anisol	43	43	43
Decanol	82	110	108
Undecan	66	63	64
1,2-Propandiol		98	99
Diethylenglykoldibutylaether	118	109	106
1,3-Butandiol		110	106
Cyclopentanol	60	51	50
white spirit		40	40
n-Decan	46	47	51

As you can see on the above shown literature values, it is not recommended to trust them without any comparison measurements. E.g., the literature value of n-Dodecane varies from 74C to 85C.

Procedure:

For a correct flashpoint determination the sample has to be stored at a lower temperature than the expected flashpoint, to avoid the loss of high volatile combustible components. Basically for all samples the standard setting can be used:

rate	step	air
5,5C/min	1,0C	0,6sec

For measurements above 100°C (212°F) a step of 2°C (4°F) is recommended for better reproducibility.

For flavors / fragrances and paints, ASTM D6450 is the recommended method. For a perfect correlation to Abel Pensky and Pensky Martens customized programs can be set:

Flavors/Fragrances:

rate	step	air
5,5C/min	1,0C	0,2sec

Paints:

rate	step	air
1,0C/min	2,0C	0,2sec