

Technical Datasheet

Analysis Name:	Determination of Phthalates by GC-MS
Method Number:	LIBR 123
Scope Application:	This in-house developed qualitative screening method allows the determination of detection above or below a defined target concentration of plasticizers in laminates and cardboards by GC-MS.
Description:	A packaging sample of a surface of 0.5 dm ² , cut into pieces, is extracted with a hexane: acetone (1:1) mixture containing an internal standard (di-n-pentyl phthalate or dipentyl phthalate, DnPP). A duplicate sample of 0.5 dm ² cut into pieces is also extracted with a solution of hexane: acetone (1:1) containing all the plasticizers at a defined target concentration for each compound and the same internal standard (DnPP). The vials are shaken for 6 hours then the extracts are directly injected on GC-MS in scan mode. Plasticizers are identified by their retention time and mass spectrum. Peak area of each plasticizer (vs. peak area of internal standard) from non-spiked sample is divided by the peak area of the same plasticizer (vs. peak area if internal standard) from spiked sample to calculate a ratio. Above a defined ratio, plasticizer is regarded as exceeding the acceptable limit (STC).
Sample Weight Required:	Sheet of laminated (1 m)
Method Reference:	-
Analytical Platform:	GC-MS
Special Information:	Method not accredited.

Analyte Reported	Alias	Unit of Measure	Typical Limit of Quantification	Uncertainty
Phthalate-benzylbutyl ester (BBP)	-	µg/dm ²	10	-
Phthalate-di-2-ethylhexyl ester DEHP	-	µg/dm ²	10	-
Phthalate-dibutyl ester (DBP)	-	µg/dm ²	10	-
Phthalatade dimethyl (DMP)	-	µg/dm ²	10	-
Phthalatade diethy (DEP)	-	µg/dm ²	10	-

Dimethyl sebacate (DMS)	-	µg/dm ²	10	-
Dibutyl sebacate (DBS)	-	µg/dm ²	10	-
Adipate di-(2-ethylhexyl) (DEHA)	-	µg/dm ²	10	-
Di-(2-ethylhexyl) sebacate (DEHS)	-	µg/dm ²	10	-
Phthalate Di-n-octyl (DNOP)	-	µg/dm ²	10	-
Phthalate Dipropyl (DPrP)	-	µg/dm ²	10	-
Adipate Diethyl (DEA)	-	µg/dm ²	10	-
Adipate Dibutyl (DBA)	-	µg/dm ²	10	-
Adipate Diisobutyl (DIBA)	-	µg/dm ²	10	-
2-ethylhexyl diphenyl phosphate (DPOF)	-	µg/dm ²	10	-
2,2,4-ME-1,3-pentanediol diisobutyra	-	µg/dm ²	10	-
Bis(2-ethylhexyl) terephthalate DOTP	-	µg/dm ²	10	-