

Proficiency Testing (PT) at the IFA, List of Chemicals

1 PT Organic Solvents and PT Volatile Organic Compounds (VOC) with Thermal Desorption

Substance	CAS No.	Purity	Product No.	Manufacturer
Benzaldehyde	100-52-7	≥ 99,0%	ALFAA10348.30	Thermo Fisher
Benzene	71-43-2	≥ 99,0%	319953	Honeywell
1-Butanol	71-36-3	99,4 %	31068	Alfa Aesar
2-Butanol	78-92-2	≥ 99,3 %	20812.295	VWR Chemicals
iso-Butanol	78-83-1	≥ 99,8 %	20833.297	VWR Chemicals
Butanone	78-93-3	≥ 99,5 %	04380.1L	Fluka
2-Butoxyethanol	111-76-2	≥ 99 %	8.01554.1000	Merck
2-(2-Butoxyethoxy)ethyl acetate	124-17-4	≥ 99,2 %	537535-1L	Sigma-Aldrich
2-Butoxyethyl acetate	112-07-2	> 99 %	1.01395.1000	Merck
Isobutyl acetate	110-19-0	≥ 98 %	A14892.AP	Alfa Aesar
n-Butyl acetate	123-86-4	99,50 %	402842-500 mL	Sigma-Aldrich
3-Carene	498-15-7	90 %	AB139263	ABCR
Cumene	98-82-8	99,00 %	A11864.AP	Thermo Fisher
Cyclohexane	110-82-7	≥ 99,8 %	1.028.171.000	Merck
Decamethylcyclopentasiloxane	541-02-6	≥ 97 %	8.14751.0250	Merck
n-Decane	124-18-5	≥ 94 %	8.20383.1000	Merck Millipore
n-Dodecane	112-40-3	≥ 98 %	44020	Fluka
Ethanol	64-17-5	≥ 99,8	1.02371.1000	Merck
2-Ethoxyethanol (EGEE)	110-80-5	99 %	A16100	Alfa Aesar
2-Ethoxyethyl acetate	111-15-9	98+ %	A13639-500 mL	Alfa Aesar
Ethyl acetate	141-78-6	> 99,8 %	1.00789.1000	Merck
Ethylbenzene	100-41-4	≥ 99 %	8.01372.1000	Merck
2-Ethoxyethyl acetate	111-15-9	98+ %	A13639-500 mL	Alfa Aesar
n-Heptane	142-82-5	99 %	A19894.AP	Alfa Aesar
n-Heptane	142-82-5	99 %	19.481.000	ChemSolute
n-Hexane	110-54-3	≥ 99 %	00139386 000500	Sigma-Aldrich
2-Methoxyethanol	109-86-4	99 %	A17459-500ML	Alfa Aesar
1-Methoxy-2-propanol	107-98-2	≥ 99,5 %	484407-1L	Sigma-Aldrich
1-Methoxy-2-propanol acetate	108-65-6	99,5+ %	484431 00100	Sigma-Aldrich
Methylcyclohexane	108-87-2	≥ 99 %	A16057.AP	Alfa Aesar
4-Methyl-2-pentanone	108-10-1	≥ 99,0 %	58600-250mL	Fluka

Substance	CAS No.	Purity	Product No.	Manufacturer
n-Nonane	111-84-2	> 99 %	A26277-500mL	Alfa Aesar
n-Octane	111-65-9	> 99 %	8.06910.1000	Merck Millipore
n-Pentadecane	629-62-9	≥ 98 %	76510	Fluka
α-Pinene	80-56-8	98 %	147524-250mL	Sigma-Aldrich
1-Propanol	71-23-8	> 99,5 %	43848.AP	Alfa Aesar
2-Propanol	67-63-0	> 99,5 %	8.18766.10000	Merck
1,2,3-Trimethylbenzene	526-73-8	92,1 %	T73202-50ml	Sigma-Aldrich
1,2,4-Trimethylbenzene	95-63-6	≥ 98 %	8.14505.0500	Merck
Toluene	108-88-3	for analysis	108325.1000	Merck Millipore
m-Xylene	108-38-3	99+%	A0450214	Thermo Fisher
o-Xylene	95-47-6	99%	AB120051	abcr
p-Xylene	106-42-3	99 %	134449-500ml	Sigma-Aldrich

Updated: 07/2025

2 PT Aldehydes

Substance	CAS No.	Purity	Product No.	Manufacturer
Acetaldehyde	75-07-0	for synthesis	8.00004.0500	Sigma-Aldrich
Butyraldehyde	123-72-8	≥ 99,5 %	418102-100ml	Sigma-Aldrich
Paraformaldehyde	30525-89-4	≥ 95 %	8.18715.0100	Merck
Propionaldehyde	123-38-6	for synthesis	8.22133.0100	Sigma-Aldrich

Updated: 01/2024

3 PT Inorganic Acids

Substance	CAS-Nr.	Product No.	Manufacturer
Fuming Hydrochloric acid, 34 %	7647-01-0	6900.500	Baker
Nitric acid 69 %	7697-37-2	6901.500	Baker
Orthophosphoric acid 85 % p.A.	7664-38-2	1.00572.100	Supelco
Sodium carbonate EMSURE	497-19-8	1.06392.0500	Supelco
Sodium hydrogencarbonate	144-55-8	217120010	Thermo Fisher
Sulfuric acid 98 % p.A.	7664-93-9	1.00731.100	Supelco

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4 PT Metals

Substance	CAS No.	Purity	Product No.	Manufacturer
Acetic acid 100%	64-19-7	100 %	1.00063.1011	Supelco
Chromium(III) nitrate nonahydrate	7789-02-8	≥ 98,0 %	1.02481.0250	Merck
Cobalt(II) acetate tetrahydrate	6147-53-1	> 99 %	1.02530.0250	Merck
Copper(II) acetate monohydrate	6046-93-1	99-102 %	1.02711.0250	Merck
Indium(III)-acetate anhydrous	25114-58-3	99,99 %	436980100	Acros Organics
Indium(III)-acetate anhydrous	25114-58-3	99,99 %	42230	Alfa Aesar
Iron(II) gluconate hydrate	699014-53-4	99 %	44948	Sigma-Aldrich
Lead(II) acetate trihydrate	6080-56-4	99,5 – 102,0 %	1.07375.0250	Merck
Manganese(II) acetate anhydrous	638-38-0	> 98 %	B23708	Alfa Aesar
Nickel(II) acetate tetrahydrate	6018-89-9	≥ 99,0 %	72225	Merck
Zinc acetate dihydrate	5970-45-6	99,5 – 101,0 %	1.07375.0250	Merck

Updated: 07/2025

5 Test PT Polycyclic Aromatic Hydrocarbons (PAH)

Substance	CAS-No.	Purity	Product No.	Manufacturer
Anthanthrene	191-26-4	99,0 %	DRE-L20515000AL	Dr. Ehrenstorfer
Benzo[a]pyrene	50-32-8	99,9 %	DRE-XA20635000AL	LGC Standards
Coronene	191-07-1	96,0 %	DRE-L20675000AL	Dr. Ehrenstorfer
Dibenz[a,h]anthracene	53-70-3	98,7 %	DRE-L20700000AL	Dr. Ehrenstorfer
Dibenzo[a,e]pyrene	192-65-4	98,6 %	DRE-L20715000AL	Dr. Ehrenstorfer
Dibenzo[a,h]pyrene	189-64-0	96,0 %	DRE-L20717000AL	Dr. Ehrenstorfer
Dibenzo[a,i]pyrene	189-55-9	98,7 %	DRE-L20720000AL	Dr. Ehrenstorfer
Dibenzo[a,l]pyrene	191-30-0	99,3 %	DRE-L20725000AL	Dr. Ehrenstorfer
Indeno[1,2,3-cd]pyrene	193-39-5	99,6 %	DRE-XA20830000AL	Dr. Ehrenstorfer
5-Methylchrysene	3697-24-3	99,7 %	DRE-L20885000AL	Dr. Ehrenstorfer

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