

Measurements under Different Gas Atmospheres



	Air	N ₂	Ar	He	O ₂	Vacuum	Ar+2%H ₂	H ₂ , C _x H _y (CH ₄), CO	Humidity	CO ₂ (<1200°C)	Cl ₂ , F ₂ , HF, NO _x	H ₂ S, HCl, SO ₂ (dry, <600°C)	NH ₃ (<600°C)	Gas mixtures
DIL 402 PC	✓	✓	✓	✓	✓	No	No	No	No	✓*	No	No	No	?
DIL 402 C	✓**(1680°C)	✓(1900°C)	✓	✓	✓**(1680°C)	10 ⁻⁴ mbar	✓	expl.**	✓**	✓	No	expl., corr.**	expl.**	?
DIL 402 CD	✓	✓	✓	✓	✓**(1680°C)	10 ⁻⁴ mbar	✓	expl.**	✓**	✓	No	expl., corr.**	expl.**	?
DIL 402 E	✓**(1680°C)	✓(1900°C)	✓(2000°C)	✓	✓**(1680°C)	10 ⁻⁴ mbar	✓(2000°C)	expl.**	No	✓	No	No	expl.**	?
DMA 242	✓	✓	✓	✓	✓	No	✓	expl.**	✓**	✓	No	No	expl.**	?
DSC 20X F1/F3	✓	✓	✓	✓	✓	No	✓	expl.**	No	✓	No	No	expl.**	?
DSC 204 HP	✓	✓	✓	✓	✓	10 ⁻² mbar	✓	expl.**	No	✓	No	No	expl.**	?
DSC 404 C	✓	✓	✓	✓	✓	< 10 ⁻⁴ mbar	✓	expl.**	✓**	✓	No	expl., corr.**	expl.**	?
LFA 447	✓	✓**	✓**	✓**	✓**	No	No	No	No	✓	No	No	No	?
LFA 457	✓	✓	✓	✓	✓	10 ⁻² mbar	✓	expl.**	No	✓	No	No	expl.**	?
LFA 427	✓**(1700°C)	✓(1900°C)	✓	✓	✓**(1680°C)	< 10 ⁻⁴ mbar	✓	expl.**	No	✓	No	expl., corr.**	expl.**	?
STA 409 PC	✓	✓	✓	✓	✓	10 ⁻² mbar	✓	expl.**	H ₂ O-furn.	✓	No	expl., corr.**	expl.**	?
STA 449 C	✓	✓	✓	✓	✓	< 10 ⁻⁴ mbar	✓	expl.**	H ₂ O-furn.	✓	No	expl., corr.**	expl.**	?
STA 409 CD	✓**(1750°C)	✓(1900°C)	✓	✓	✓**(1680°C)	10 ⁻⁴ mbar	✓	expl.**	H ₂ O-furn.	✓	No	expl., corr.**	expl.**	?
STA 429	✓**(1680°C)	✓(1900°C)	✓	✓	✓**(1680°C)	<10 ⁻⁴ mbar	✓	expl.**	H ₂ O-furn.	✓	No	expl., corr.**	expl.**	?
TG 209 F1/F3	✓	✓	✓	✓	✓	10 ⁻² mbar	✓	✓**	✓**	✓	No	No	expl.**	?
TMA 202/402	✓	✓	✓	✓	✓	10 ⁻² mbar	✓	No	No	✓	No	No	No	?

* No pure atmospheres possible

expl.: Can create explosive atmospheres: Any measurements under such conditions are done on the customers risk. NETZSCH takes over no warranty or responsibility for such measurements.

** Special instrument design (modifications) necessary/recommended

(This document contains a summary of different literature sources. No warranty can be taken over.)

H₂ and Hydrocarbons: Reaction with Platinum above ≈600°C (W/Re sensors necessary)
Humidity: Only use inert gas saturated with water vapor, reaction with Graphite above ≈1500°C
Carbon dioxide (CO₂): Considerable dissociation above ≈800°C
Carbon monoxide (CO): Toxic, reaction with Platinum above ≈600°C (W/Re sensors necessary)
Hydrogen sulphide (H₂S): Toxic, dissociation above ≈400°C, reaction with Platinum above ≈600°C
Chlorine, Fluorine (Cl₂, F₂): Very toxic, reactions with Platinum, Alumina and Graphite
Hydrochloric acid (HCl): Toxic, reactions with Platinum and Alumina at elevated temperatures
Sulphur dioxide (SO₂): Toxic, never use together with humidity
Ammonia (NH₃): Dissociation above 400°C in the presence of Platinum, reaction with Platinum above ≈600°C
Nitrogen oxides (NO_x): Toxic, not use with flammable or explosive gases (forms explosive mixtures)
Gas mixtures: Humidity shall never be mixed with corrosive atmospheres