

of **TPF Control B.V.**

This annex is valid from: **31-01-2017** to **01-12-2017**

Replaces annex dated: **22-10-2014**

Location(s) where activities are performed under accreditation

Head Office

Van Heemstraweg 19
 6657 KD
 Boven-Leeuwen
 Netherlands

HCS code	Measured quantity, Instrument, Measure	Range	CMC ¹	Remarks
FG 1 0	FLOW OF GAS			
FG 1 1	Gas flow rate	0.5 – 1 ml _r /min	0.60%	<i>Activities carried out in the Boven-Leeuwen laboratory</i>
		1 – 5 ml _r /min	0.34%	
		5 – 50000 ml _r /min	0.18%	
		0.5 – 2500 m ³ _r /h	0.25%	
FG 1 1	Gas flow rate	5 – 50000 ml _r /min	0.27%	<i>Activities carried out on-site customers location (outside the laboratory)</i>
		3 – 1000 m ³ _r /h	0.27%	

This annex has been approved by the Board of the Dutch Accreditation Council, on its behalf,

J.A.W.M. de Haas
 Director of Operations

¹ Calibration and Measurement Capability (CMC): Demonstrated measurement uncertainty, with coverage probability of 95%, in a given measurement point or measurement range. Measurement uncertainty, *U*, is calculated according to EA-4/02 "Expression of the Uncertainty of Measurement in Calibration".

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HCS code	Measured quantity, Instrument, Measure	Range	CMC ¹	Remarks
TE 0 0	TEMPERATURE			<i>Activities carried out in the Boven-Leeuwen laboratory</i>
TE 4 0	Self-indicating thermometers	-80 °C to -40 °C	0.30 °C	Using dry block furnace
		-40 °C to 140 °C	0.015 °C	Using oil bath
RH 0 0	HUMIDITY			
RH 1 0	Hygrometers	10 %rh to 95 %rh	1.7 %rh	20 °C – 55 °C
PV 1 0	GAS PRESSURE			
PV 1 1	Absolute pressure	6 kPa to 100 kPa	$2.5 \cdot 10^{-3} \cdot p + 13 \text{ Pa}$	
		100 kPa to 1000 kPa	$0.6 \cdot 10^{-3} \cdot p$	
PV 1 2	Gauge pressure	6 kPa to 100 kPa	$1.5 \cdot 10^{-3} \cdot p_e + 13 \text{ Pa}$	
		100 kPa to 1000 kPa	$0.3 \cdot 10^{-3} \cdot p_e$	
PV 3 1	Negative gauge pressure	-95 kPa to -6 kPa	$0.6 \cdot 10^{-3} \cdot p_e + 50 \text{ Pa}$	

Remarks:

Ambient conditions are between 15 °C and 30 °C.

The flow units ml_n/min and m³_n/h refer to gases under normal (n) conditions of 0 °C and 1013.25 mbar. Uncertainties are expressed in percentage of the measured flow.