

6 - TEST / ACCEPTANCE SPECIFICATION

Customer:	SINOPEC C/O: LabTech		
Quotation Number:	15737	Date:	08/11/2021
Job Number:	IN1273	Date:	10/01/2022

HS20-22			
Reference Gas Precision (n=5)			
¹³ C	(CO ₂)	0.06	
¹⁵ N		0.06	
¹⁸ O	(CO ₂)	0.06	
³⁴ S	(SO ₂)	0.1	
² H		0.4	

Reference Gas Linearity			
¹³ C	≤0.02‰/nA		
¹⁵ N	≤0.02‰/nA		

IsoEarth & IsoEarth+					
Combustion (n=5)					
¹³ C	100 µg C	0.1		10 µg C	0.8
¹⁵ N	100 µg N	0.15		10 µg N	1.5
³⁴ S	25 µg S	0.3		10 µg S	1.0
Dual	400 µg C	0.1		100 µg N	0.15

Integra2			
¹³ C	100 µg C	0.2	
¹⁵ N	100 µg N	0.3	
Dual	100 µg N & 400 µg C	0.4 & 0.15	
³⁴ S	30 µg S	0.5	
¹⁸ O	100 µg O	0.5	

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HT-EA			
Pyrolysis (n=5)			
¹⁸ O	100 µg O or 1 µl water	0.3	
² H	200 µg H or 1 µl water	1.0	

Aqua, µCarbs & GasBox <i>n/A. P.H.</i>			
Equilibrations (n=5)			
¹⁸ O	0.2 ml water	0.1	
² H	0.2 ml water	2.0	
Carbonates (n=5)			
¹³ C	100 µg CaCO ₃	0.08	
¹⁸ O	100 µg CaCO ₃	0.1	
Gas Analysis (n=5)			
¹³ C	5% CO ₂	0.1	Air CO ₂ 0.1
¹⁸ O	5% CO ₂	0.1	Air CO ₂ 0.2
² H	0.5 ml H ₂	1.5	
¹⁵ N	0.5 ml N ₂	0.1	100 ppm N ₂ O 0.5
¹³ C	Breath (12 ml)	0.1	
DIC (n=5)			
¹³ C	15ppm (0.5ml)	0.15	

LC-I			
(n=5)			
¹³ C		0.2	

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GC Orchid						
Combustion (n=3 for each analyte)						
¹³ C	3 Alkanes	100 ng C	0.2	10 ng C	0.5	
¹⁵ N	2 Amines	100 ng N	0.5	14 ng N	1.5	
Pyrolysis (n=3 for each analyte)						
² H	3 Alkanes	250 ng H	3.0	25 ng H	10.0	
¹⁸ O	3 FAMES	100 ng O	0.5	20 ng O	2.0	
Water pyrolysis (n=5)						
² H	0.1 µl water	3.0				
¹⁸ O	0.1 µl water	0.4				

CryoRange						
(n=5)						
¹³ C	Air CO ₂ (12ml)	0.1	Air CH ₄ (125ml)	0.2		
¹⁵ N	Air N ₂ (1ml)	0.1	Air N ₂ O (125ml)	0.4		
¹⁸ O	Air CO ₂ (12ml)	0.15	Air N ₂ O (125ml)	0.7		
¹⁸ O	Air O ₂ (1ml)	0.1				
² H	Air CH ₄	3.0				
¹³ C	TOC (5ppm)	0.4				
¹³ C	Laser					

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Geo2			
Internal precision (no change overs)			
² H	200 Bar µl	0.15	
¹³ C	100 Bar µl	0.01	
¹⁵ N	100 Bar µl	0.01	
¹⁸ O	100 Bar µl	0.015	
³⁴ S	100 Bar µl	0.015	
Single cold finger volumes (10 change overs)			
¹³ C	20 Bar µl	0.01	
¹⁸ O	20 Bar µl	0.015	
¹³ C	3 Bar µl	0.02	
¹⁸ O	3 Bar µl	0.03	
CAPS (n=5)			
¹³ C	50 µg CaCO ₃	0.03	
¹⁸ O	50 µg CaCO ₃	0.06	
WES (n=5)			
² H		1.0	
¹⁸ O		0.05	
Manifold (10 tubes)			
² H		0.5	
¹³ C		0.02	
¹⁵ N		0.02	
¹⁸ O		0.03	
³⁴ S		0.03	



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Test acceptance - 6

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Special tests
Tested on Paul Dennis's refurb GEO.
No test data.

Sales Signature: <i>J. Green</i>	Date: <i>30/8/22</i>
Test Signature: <i>P. Hays</i>	Date: <i>30/8/22</i>