

A new standard for Bayer liquor analysis

BLAIR

BAYER LIQUOR ANALYSIS BY INFRA-RED

BLAIR
File FTIR Autosampler Queue Method Database Help
Queue Results Controls

Result database

Name contains

Name	A	C	S	Na2SO4	NaCl	TOC	Oxalate	Density	Acetate	Formate	Succinate	Malonate	Total Na
synth_liq_3	47.6	236.3	258.5	8.9	4.1	9.3	0.3	1.238	9.2	9.8	9.7	9.3	294.0
synth_liq_4	47.7	237.3	257.9	9.0	5.9	9.3	0.3	1.240	9.4	9.8	8.8	9.7	295.4
synth_liq_5	47.5	237.6	258.2	8.8	6.2	9.2	0.3	1.241	9.2	10.1	9.4	9.2	296.1
synth_liq_6	48.0	238.0	258.8	8.9	6.1	9.3	0.4	1.241	9.6	9.9	8.9	9.4	296.7
synth_liq_7	48.4	239.0	259.3	8.9	6.9	9.4	0.3	1.242	9.7	9.7	8.5	9.8	297.6
synth_liq_8	48.3	238.2	259.1	8.8	5.9	9.3	0.4	1.242	9.2	9.5	9.1	10.0	296.2
synth_liq_9	48.3	237.7	258.6	8.7	6.1	9.2	0.4	1.241	8.8	9.5	9.0	9.6	296.0
synth_liq_10	47.8	237.5	258.8	8.8	5.1	9.2	0.3	1.240	8.8	9.5	9.1	9.6	295.7
synth_liq_11	47.4	237.4	258.0	8.5	5.4	9.2	0.3	1.241	9.2	10.0	8.9	9.4	294.4
synth_liq_12	47.9	237.4	259.3	8.4	6.4	9.2	0.3	1.242	9.5	10.1	8.8	9.3	296.2
synth_liq_13	47.6	237.3	258.4	8.9	6.4	9.4	0.3	1.242	10.0	10.1	8.7	9.6	295.8
A2	48.0	237.8	259.1	9.0	6.6	9.4	0.3	1.241	10.0	10.1	8.2	9.3	297.8
A3	48.5	238.0	259.5	9.1	6.7	9.5	0.3	1.241	9.6	10.4	8.7	9.4	297.9
A4	48.0	237.2	258.1	9.0	6.0	9.3	0.3	1.241	10.4	10.5	8.8	9.4	296.9
A5	48.2	237.4	258.8	8.9	6.4	9.5	0.3	1.240	10.4	10.6	8.5	9.4	298.3
A6	47.6	236.6	258.3	8.9	6.8	9.5	0.2	1.241	10.1	10.7	8.4	9.3	296.7
A7	47.6	236.6	258.3	8.9	6.8	9.5	0.2	1.241	10.6	10.7	8.1	9.3	296.9
A8	47.6	236.6	258.2	9.4	7.0	9.6	0.4	1.241	9.8	10.0	8.5	9.8	298.3
A9	48.1	237.0	258.2	9.3	7.8	9.9	0.4	1.241	9.8	10.0	8.4	9.8	298.7

Fast, comprehensive and reliable analysis

BLAIR is Bayer Liquor Analysis by Infra-Red. It's a powerful technology for quantitatively analysing Bayer liquors which conveniently provides over twelve Bayer liquor parameters. BLAIR requires no messy titrations, no dilutions and no additional reagents. The older classical methods of analysis are time consuming and provide unreliable results if not constantly maintained. BLAIR gives repeatable and reliable results, whether you are measuring an occasional sample or analysing continuously.

The all-in-one system

BLAIR provides a wealth of chemical information that previously would have required several instruments. It provides this information at a lower cost and in far less time than current methods of Bayer liquor analysis.

A single BLAIR measurement provides:

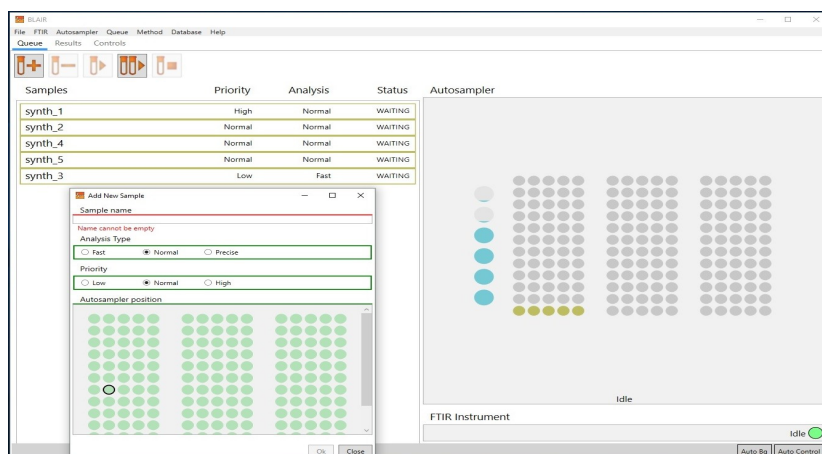
- alumina
- total alkalinity
- oxalate
- formate
- malonate
- sulfate
- total caustic
- TOC
- acetate
- succinate
- chloride
- density

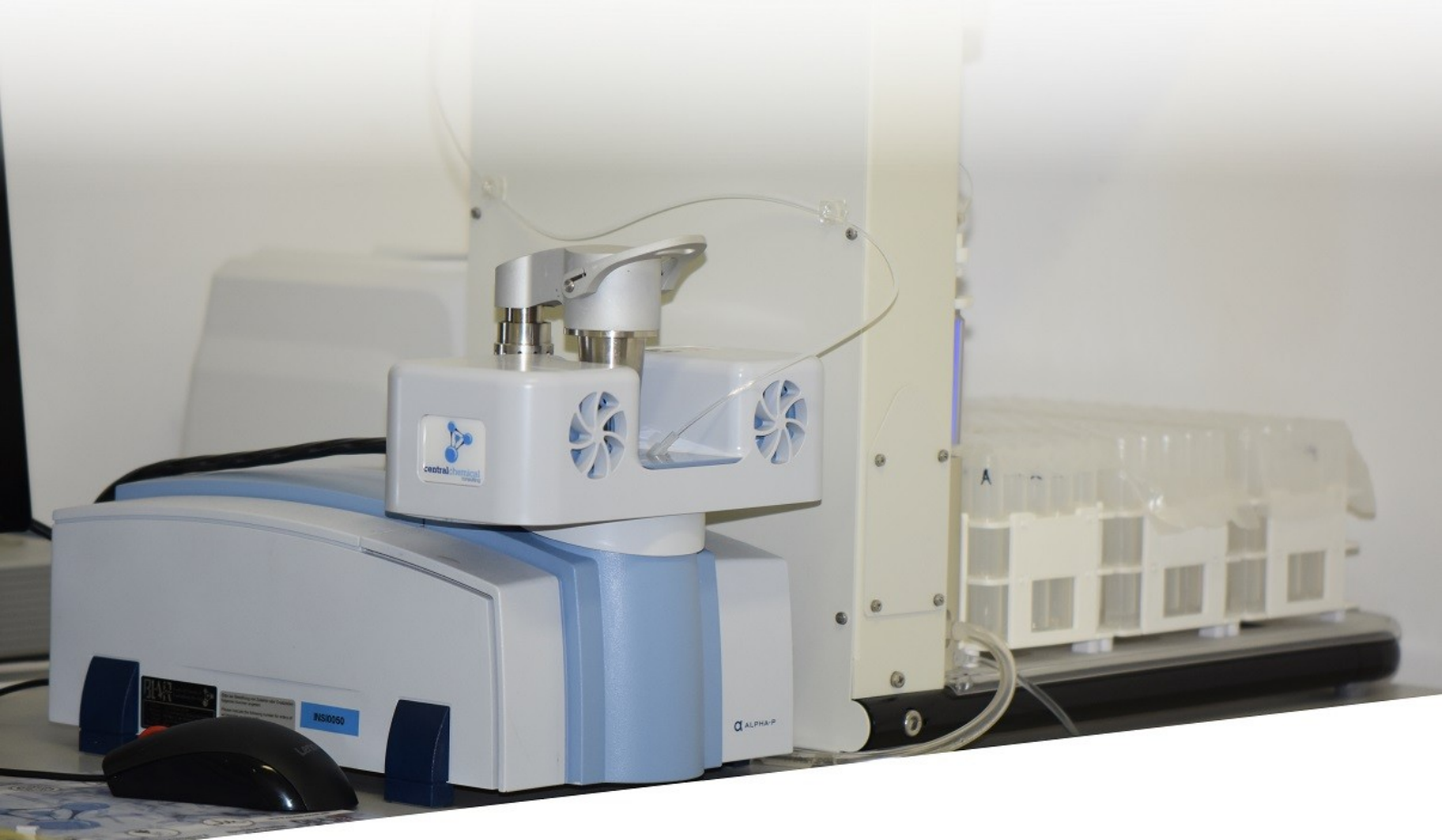
Analysis of Bayer organics made easy

In less than five minutes BLAIR measures TOC, oxalate, acetate, formate, succinate and malonate. A relative measure of the oxidation and breakdown of organics between liquors can also be quickly assessed through the Borg value (a parameter unique to BLAIR).

Advantages of BLAIR

- Over twelve Bayer liquor parameters in less than five minutes
- Small sample volumes and no additional reagents needed
- Direct measurements over the whole Bayer liquor range
- Low capital cost and robust system
- No prior sample knowledge or dilution required
- Less on-going maintenance
- Applicable for laboratory based and on-line monitoring





BLAIR Specifications

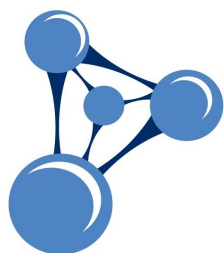
Measurement parameters	Total alumina (A), total caustic (C), total alkalinity (S), TOC, oxalate, acetate, formate, succinate, malonate, sulfate, chloride, density and the Borg value			
Sample volume	12 mL (automated system, 180 sample capacity, sample density <1.45 g/mL)			
Measurement time	<1.5 min (Rapid), ~2 min (Normal) & ~10 min (Precise)			
Accuracy[#]	A	0.9 g/L	TOC	1.0 g/L
	C	1.6 g/L	oxalate	0.3 g/L
	S	1.7 g/L	acetate	1.0 g/L
	A/C	0.014	formate	0.4 g/L
	C/S	0.014	succinate	0.9 g/L
	Total Na	3.5 g/L	malonate	0.6 g/L
	chloride	0.8 g/L	density	0.005 g/mL
	sulfate	0.4 g/L		
Precision[^]	A	0.3 g/L	TOC	0.2 g/L
	C	0.5 g/L	oxalate	0.1 g/L
	S	0.5 g/L	acetate	0.3 g/L
	A/C	0.0008	formate	0.3 g/L
	C/S	0.0012	succinate	0.2 g/L
	Total Na	0.7 g/L	malonate	0.2 g/L
	chloride	0.3 g/L	density	0.001 g/mL
	sulfate	0.1 g/L		
Component	BLAIR FTIR unit	BLAIR Autosampler	BLAIR Electronics Unit	Blair Pump
Dimensions WxDxH (mm)	300x400x250	285x490x510	170x227x60	203x267x203
Weight (kg)	7	13.5	1	6.9
Power Supply	100 – 240 VAC, 50 - 60 Hz			

Root mean square error (RMSE) for Precise mode measurements on a validation set of sixty two Bayer liquors. Similar accuracy for Rapid and Normal mode measurements

[^] Standard deviations for forty Precise mode measurements of the same stable spent Bayer liquor. Standard deviations for Rapid mode measurements are approximately twice the precision values given above. Standard deviations for Normal mode measurements are approximately one and a half times the precision values given above.



We are the original developer of BLAIR and are committed to its success. We are also committed to increasing the efficiency of your Bayer liquor analyses. Our aim is to help you get the best from your alumina refinery - quickly, conveniently and at a low cost. Our PhD qualified R&D group have decades of experience in providing expert technical backup, support and training that is second to none. Please consider BLAIR, and contact us for more information about the BLAIR system, or to discuss your specific requirements.



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