

FLUXANA

Your supplier for
XRF Application Solutions

HD

ELEKTRONIK
Fusion machines



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Finanzamt Kleve

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Official agent

Application Glass Industry

We offer ready to go **calibration packages** for x-ray fluorescence analysis.

Our team has developed special calibration packages:

- **Products: Glass and Raw Materials, e.g.** Calumite, Nepheline, Soda, Sand, Anhydrite, Limestone, etc.

We install the **complete analytical method**, within a few days, on the XRF instrument in your laboratory.



Z		A		Symbol		Element		Ox>El		Oxid		El>Ox	
1	1.008												
2	4.003												
3	6.941	4	9.012										
5	10.811	6	12.011	7	14.007	8	15.999	9	18.998	10	20.183		
11	22.990	12	24.305	13	26.982	14	28.086	15	30.974	16	32.066	17	35.453
19	39.098	20	40.078	21	44.956	22	47.88	23	50.996	24	51.996	25	54.938
27	58.933	28	58.69	29	63.546	30	65.39	31	69.723	32	72.61	33	74.922
37	85.468	38	87.62	39	88.905	40	91.224	41	92.906	42	95.940	43	98.906
45	101.07	46	106.42	47	107.868	48	112.411	49	114.82	50	118.71	51	121.75
53	127.60	54	137.29	55	132.905	56	137.327	57	178.49	58	180.948	59	183.85
63	187.04	64	188.907	65	190.23	66	192.22	67	195.08	68	196.967	69	198.907
71	200.59	72	200.59	73	200.59	74	200.59	75	200.59	76	200.59	77	200.59
79	223.02	80	223.02	81	223.02	82	223.02	83	223.02	84	223.02	85	223.02
87	223.02	88	223.02	89	223.02	90	223.02	91	223.02	92	223.02	93	223.02
91	138.906	92	140.115	93	140.908	94	144.24	95	146.915	96	150.36	97	151.965
101	252.083	102	252.083	103	252.083	104	252.083	105	252.083	106	252.083	107	252.083
109	260.105	110	260.105	111	260.105	112	260.105	113	260.105	114	260.105	115	260.105

Advantages to developing your application with us:

1. **No development time** in your laboratory
2. **Cost saving**
3. Fast introduction of **new methods**
4. **Easy calculation** of costs
5. **Guarantee** on reproducibility and accuracy
6. Calibration with **highest quality**
7. Newcomers become **experts** quickly
8. Guaranteed **after sales support**

Typical content of a package:

- Sample **preparation tools**: fusion machine, mill
- **Chemicals**: flux, oxidizer, additives
- 1 set of **calibration standards** ready for measurement
- 1 set of **drift correction samples**
- 1 set of **validation samples**
- Installation of **measuring program** on the XRF instrument in your laboratory
- **Calibrating on site**
- **Validation** with your own samples
- **Training** of your laboratory staff
- **Customer acceptance**
- **After sales support** from our team of XRF experts
- Contribution to our **round robin tests**
- **Cross check** of routine results with our application laboratory



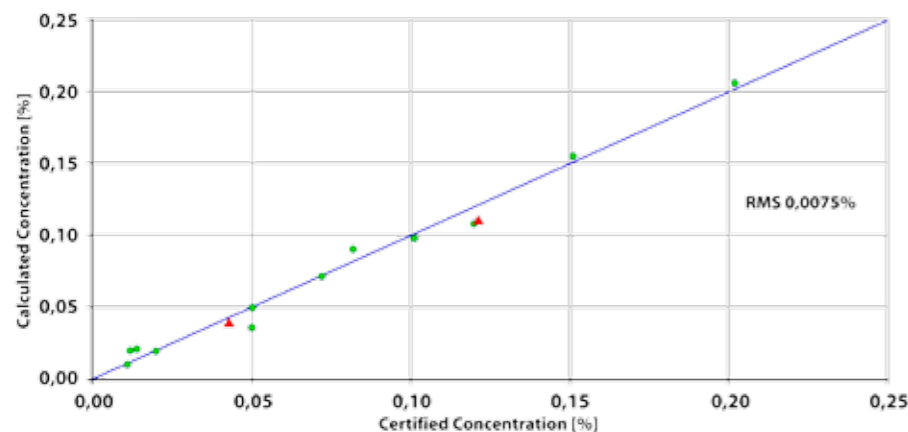
Vulcan 4MA



All standard calibrations are developed in our own application laboratory. We will be pleased to accept your test samples for evaluation in our laboratory and can work together with you to develop new methods to transfer to install in your laboratory.

Ask for a free presentation in our lab whenever you like.

Fe calibration curve in glass and raw materials



Concentration ranges for fusion programs

Component	Raw Materials	
	Min %	Max %
Na ₂ O	0	60,0
MgO	0	35,0
Al ₂ O ₃	0	25,0
SiO ₂	0	100,0
SO ₃	0	50,0
K ₂ O	0	9,0
CaO	0	100,0
TiO ₂	0	1,0
Fe ₂ O ₃	0	0,2

Component	Glass	
	Min %	Max %
Na ₂ O	8	12,0
MgO	2	6,0
Al ₂ O ₃	0	1,0
SiO ₂	50	70,0
SO ₃	0	0,4
K ₂ O	0	1,0
CaO	6	9,0
TiO ₂	0	0,12
Fe ₂ O ₃	0	0,2

Validation examples

Glass NIST 620

Component	SiO ₂	Al ₂ O ₃	CaO	MgO	K ₂ O	Na ₂ O	SO ₃	Fe ₂ O ₃	TiO ₂	Sum
Cert. Values	72,08	1,80	7,11	3,69	0,41	14,39	0,28	0,043	0,018	99,82
Meas. Values	71,97	1,72	7,18	3,78	0,38	14,29	0,25	0,042	0,018	99,84
Diff	-0,11	-0,08	0,07	0,09	-0,03	-0,10	-0,03	-0,001	0,000	

Sand IPT62

Component	SiO ₂	Al ₂ O ₃	CaO	MgO	K ₂ O	Na ₂ O	SO ₃	Fe ₂ O ₃	TiO ₂	Sum
Cert. Values	99,62	0,11						0,072	0,036	99,27
Meas. Values	99,64	0,17	0,01	0,00	0,03	0,01	0,05	0,083	0,040	100,01
Diff	0,02	0,06	0,01	0,00	0,03	0,01	0,05	0,011	0,004	

Gypsum GYP-C

Component	SiO ₂	Al ₂ O ₃	CaO	MgO	K ₂ O	Na ₂ O	SO ₃	Fe ₂ O ₃	TiO ₂	Sum
Cert. Values	4,71	1,06	40,88	7,19	0,48	0,03	44,37	0,54		99,27
Meas. Values	4,71	1,06	40,69	7,19	0,47	0,14	44,76	0,63	0,050	99,70
Diff	0,00	0,00	-0,19	0,00	-0,01	0,11	0,39	0,09		

Limestone BAS513

Component	SiO ₂	Al ₂ O ₃	CaO	MgO	K ₂ O	Na ₂ O	SO ₃	Fe ₂ O ₃	TiO ₂	Sum
Cert. Values	0,41	0,19	98,90	0,32	0,03		0,04	0,049		99,94
Meas. Values	0,44	0,23	98,38	0,28	0,02	0,02	0,07	0,041	0,020	99,49
Diff	0,03	0,04	-0,52	-0,05	-0,01	0,02	0,03	-0,008	0,020	

Nepheline sample

Component	SiO ₂	Al ₂ O ₃	CaO	MgO	K ₂ O	Na ₂ O	SO ₃	Fe ₂ O ₃	TiO ₂	Sum
Specification	56,00	23,70	1,40	0,00	8,90	7,90	0,00	0,100	0,100	98,10
Meas. Values	54,79	24,08	1,33	0,06	8,76	7,75	0,06	0,099	0,087	97,00
Diff	-1,21	0,38	-0,07	0,06	-0,14	-0,15	0,06	-0,001	-0,013	

Application packages

FLUXANA and HD Elektronik Kleve have developed applications for the following products. We will be pleased to help you set up your own high precision method. Ready to go application packages:

Part No.:	Application
CS- 0016	Glass
CS- 0022	Raw Materials for Glass