

Note - Items indicated with "PT Report" under certification status will undergo certification protocol to issue Analytical Report (AR) or Certificate of Analysis (COA)

CHROME												
TYPE:	Cr-Ore											
Description	Al ₂ O ₃	C	CaO	Cr ₂ O ₃	FeO	MgO	MnO	P	S	SiO ₂	TiO ₂	V ₂ O ₅
	%	%	%	%	%	%	%	%	%	%	%	%
1-089	14,73		0,374	39,117	26,164	10,116	0,229	0,004	0,008	5,58	0,951	
1-129	26,29		14,59	0,091	2,401	2,457	0,04	0,007	0,007	48,683	0,121	0,009
1-109	11,952		1,71	30,052	19,821	14,304	0,212	0,006	0,008	19,633	0,504	0,25
1-113	13,27		1,14	37,36	22,4	12,06	0,22	0,004	0,008	11,25	0,56	0,31
1-117	15,122		0,482	39,291	26,512	10,553	0,252	0,004	0,116	5,531	0,844	0,362
1-125	16,33		1,226	33,899	23,138	10,394	0,216	0,005	0,005	11,562	0,665	0,355
1-130	14,308		0,721	38,345	24,393	10,333	0,23	0,005	0,008	8,242	0,654	0,357
1-134	14,71		0,73	38,73	24,37	10	1,28	0,006	0,006	7,64	0,65	0,34
1-146	11,47		1,077	34,35	21,38	12,68	0,298	0,012	0,95	13,41	0,567	0,112
1-154	14,69		0,35	39,19	25,9	10,09	0,22	0,004	0,01	5,51	0,96	0,34
1-172	14,36		1,15	36,54	23,53	10,88	0,22	0,006	0,014	10,36	0,67	0,32
1-176	14,39		0,82	38,96	23,35	11,42	0,21	0,005	0,009	8,47	0,71	0,34
1-182	13,56	0	0,66	37,72	22,49	12,59	0,21	0,005	0,008	10,5	0,6	0,3
1-186	14,09	0,06	1,011	36,86	23,02	11,25	0,215	0,005	0,008	10,22	0,66	0,33
1-196	13,372		0,985	36,144	22,058	12,672	0,213	0,005	0,008	12,34	0,583	0,314

TYPE:	Cr-Conc											
Description	Al ₂ O ₃	C	CaO	Cr ₂ O ₃	FeO	MgO	MnO	P	S	SiO ₂	TiO ₂	V ₂ O ₅
	%	%	%	%	%	%	%	%	%	%	%	%
1-094	14,834		0,221	45,189	25,944	10,038	0,235	0,004	0,005	1,875	0,677	
1-098	14,764		0,197	45,274	25,73	10,001	0,277	0,005	0,006	1,748	0,651	
1-102	14,333		0,233	44,158	25,666	10,262	0,251	0,004	0,004	3,083	0,638	
1-106	15,33		0,575	40,698	26,04	10,028	0,265	0,004	0,192	4,625	0,786	0,371
1-110	14,678		0,155	46,586	26,021	9,684	0,227	0,003	0,004	0,707	0,623	0,385
1-114	14,255		0,293	44,24	25,129	10,289	0,228	0,004	0,007	3,549	0,598	0,365
1-118	12,479		0,795	43,44	24,976	9,899	0,325	0,007	0,503	5,062	0,756	0,161
1-122	11,967		0,755	40,863	24,201	10,606	0,318	0,008	0,724	7,166	0,679	0,143
1-126	14,192		0,517	38,996	27,078	10,51	0,309	0,004	0,292	5,607	0,836	0,379
1-131	14,924		0,138	46,182	26,11	9,654	0,245	0,003	0,004	0,789	0,688	0,386
1-135	14,78		0,17	45,66	26,14	9,783	0,233	0,003	0,005	1,334	0,657	0,374
1-139	15,67		0,239	41,4	27,18	9,83	0,242	0,004	0,038	3,065	0,96	0,365
1-143	12,64		0,439	43,91	21,2	11,32	0,246	0,004	0,009	7,76	0,47	0,267
1-147	14,85		0,149	45,5	26,37	9,75	0,243	0,006	0,013	1,37	0,687	0,394
1-155	15,84	0,036	0,5	40,04	26,22	10	0,23	0,004	0,009	4,87	0,76	0,41
1-159	14,99		0,17	45,12	27,12	9,39	0,24	0,003	0,008	1,18	0,74	0,39
1-162	14,28		0,2	46,56	26,72	9,37	0,23	0,005	0,007	1,61	0,68	0,38
1-163	14,37		0,45	42	25,51	10,26	0,23	0,005	0,008	4,76	0,7	0,36
1-167	15,1		0,14	45,92	25,91	9,76	0,23	0,005	0,006	1,04	0,69	0,38
1-168	14,64		0,18	44,7	27,85	9,13	0,27	0,005	0,13	1,16	0,74	0,38
1-173	14,12		0,5	41,05	24,09	11,4	0,22	0,005	0,01	6,86	0,62	0,33
1-177	14,52	0,021	0,23	43,69	25,05	10,19	0,22	0,005	0,005	3,93	0,63	0,36
1-178	14,9	0,026	0,16	45,77	26,12	9,79	0,24	0,004	0,004	1,18	0,67	0,38
1-183	15,427	0,026	0,194	42,231	28,19	9,312	0,247	0,005	0,011	2,099	1,066	0,392
1-187	12,876	0,053	0,434	45,521	24,408	9,977	0,303	0,006	0,37	3,885	0,656	0,163
1-188	14,752	0,025	0,165	45,697	26,132	9,753	0,226	0,004	0,006	1,357	0,686	0,375
1-193	15,807		0,493	40,07	26,158	10,003	0,229	0,005	0,005	4,998	0,767	0,42
1-197	14,484		0,175	46,196	26,164	9,775	0,246	0,005	0,005	1,067	0,621	0,376
1-202	14,706		0,662	40,659	25,44	10,177	0,244	0,005	0,007	5,783	0,635	0,363

Certification Status	Origin
COA Issued	Boshoek
COA Issued	Dwarsrivier
COA Issued	Dwarsrivier
COA Issued	Dwarsrivier
COA Issued	Tubatse
COA Issued	Chromtech
COA Issued	IFMSA
COA Issued (New)	ALS
COA Issued (New)	Nkomati
COA Issued (New)	Glencore Boshhoek
COA Issued (New)	Samancor WCM
COA Issued (New)	Samancor WCM
COA Issued (New)	Samancor WCM
COA Issued (New)	Samancor WCM
PT Report	Samancor WCM

Certification Status	Origin
COA Issued	Lanxess
COA Issued	Lanxess
COA Issued	Lanxess
COA Issued	Tubatse
COA Issued	Dwarsrivier
COA Issued	Dwarsrivier
COA Issued	Nkomati
COA Issued	Nkomati
COA Issued	ALS
COA Issued	PCL
COA Issued (New)	Lanxess
COA Issued (New)	Metchem
COA Issued (New)	ALS
COA Issued (New)	Lanxess
COA Issued (New)	Metchem
COA Issued (New)	Samancor WCM
COA Issued (New)	Lanxess
COA Issued (New)	Samancor WCM
COA Issued (New)	Samancor WCM
COA Issued (New)	ALS
COA Issued (New)	Samancor WCM
COA Issued (New)	Glencore
COA Issued (New)	Lanxess
PT Report	PCL
PT Report	Nkomati
PT Report	Lanxess
PT Report	Metchem
PT Report	Dwarsrivier
PT Report	Samancor ECM

QOTHO REFERENCE MATERIAL SUMMARY

Date Printed: 08 October 2021

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TYPE:		Cr-Slag										
Description	Al ₂ O ₃	C	CaO	Cr ₂ O ₃	FeO	MgO	MnO	P	S	SiO ₂	TiO ₂	V ₂ O ₅
	%	%	%	%	%	%	%	%	%	%	%	%
1-075	26,283		5,171	11,775	5,575	18,572				32,017		
1-083	23,45		4,44	14,59	9,2	17,44			0,45	29,03		
1-095	31,32		20,33	3,73	1,71	20,82				21,09		
1-107	26,13		11,08	10,61	6,61	18,42				25,67		
1-111	20,09		4,18	16,56	11,19	16,84				29,14		
1-115	26,42		5,03	11,67	5,5	18,69				31,74		
1-119	19,69		3,73	19,26	13	16,33				30,63		
1-123	29,323		4,499	11,601	6,294	19,761				28,194		
1-127	25,599		3,208	10,581	7,141	19,709				33,876		
1-132	10,176		2,912	16,947	14,601	17,398				35,763		
1-144	30,36		20,28	4,13	1,91	20,18				21,25		
1-156	19,88		3,844	15,956	10,986	16,119				33,881		
1-160	15,78		2,94	15,55	10,87	11,73				44,14		
1-164	26,61		5,08	11,91	5,74	18,63				31,42		
1-179	31,501		20,621	3,592	1,675	20,617				21,17		
1-203	30,493		4,907	8,329	4,988	18,293				30,667		

TYPE:		Cr-Metal												
Description	Al	C	Co	Cr	Fe	Mg	Mn	Ni	P	S	Si	Ti	V	
	%	%	%	%	%	%	%	%	%	%	%	%	%	
1-108	0,04	6,076	0,055	49,614	35,26		0,297	0,171	0,017	0,035	7,345	0,534	0,333	
1-120	0,051	7,56	0,06	51,7	36,01		0,269	0,174	0,02	0,041	2,742	0,355	0,327	
1-141	0,07	7,66	0,066	48,32	42,62	0,04	0,049	0,215	0,031	0,122	0,23	0,035	0,348	
1-145	0,216	6,36	0,06	48,86	37,82	0,218	0,187	0,212	0,02	0,236	4,44	0,318	0,336	
1-157	0,08	8,39	0,057	52,13	35,96	0,13	0,38	0,164	0,02	0,018	1,12	0,33	0,32	
1-161	0,09	6,18	0,055	48,48	35,45	0,12	1,16	0,17	0,045	0,047	5,76	0,5	0,32	
1-165	0,1	6,56	0,059	49,96	37,64	0,11	0,2	0,185	0,02	0,045	4,16	0,34	0,34	
1-170	0,89	6,36	0,052	50,21	32,6	0,86	0,338	0,178	0,017	0,078	4,01	0,3	0,29	
1-171		8,77	0,058	52,78	36,37	0,03	0,33	0,168	0,018	0,016	0,59	0,29	0,34	
1-175	0,74	6,29	0,054	47,83	35,23	0,62	0,2	0,165	0,018	0,051	4,63	0,42	0,33	
1-180	0,06	6,93	0,062	49,66	39,15	0,05	0,258	0,198	0,019	0,063	2,53	0,3	0,35	
1-181	0,05	6,65	0,061	49,69	38,22	0,04	0,19	0,184	0,023	0,057	4,04	0,38	0,364	
1-185	0,38	6,7	0,053	52,15	33,88	0,33	0,28	0,171	0,017	0,043	3,46	0,29	0,3	
1-190	0,1	7,23	0,061	47,48	39,46	0,07	0,092	0,19	0,018	0,099	2,37	0,113	0,345	
1-191	0,54	6,55	0,054	51,44	33,57	0,44	0,275	0,17	0,017	0,041	3,69	0,305	0,312	
1-195	0,04	7,11	0,063	49,11	40,24	0,03	0,19	0,2	0,018	0,063	2,44	0,31	0,36	
1-200	0,033	6,28	0,056	49,825	35,882	0,033	0,258	0,174	0,019	0,037	6,435	0,556	0,334	
1-204	0,046	6,098	0,059	46,623	37,559	0,037	0,847	0,184	0,02	0,074	5,972	0,557	0,401	

Certification Status	Origin
COA Issued	Tubatse
QRM Report	Hernic
QRM Report	Columbus
COA Issued (New)	Columbus
COA Issued (New)	Columbus
QRM Report	Tubatse
COA Issued (New)	Samancor FMT
COA Issued	Hernic
COA Issued	Tubatse
COA Issued	Tubatse
COA Issued (New)	Columbus
PT Report	Samancor FMT
QRM Report	Samancor FMT
QRM Report	Tubatse
PT Report	Columbus
PT Report	Samancor Dikwena

Certification Status	Origin
COA Issued	Samancor FMT
COA Issued (New)	Samancor FMT
COA Issued (New)	Samancor Tubatse
COA Issued (New)	Samancor FMT
COA Issued (New)	Samancor FMT
COA Issued (New)	Samancor Tubatse
COA Issued (New)	Samancor FMT
COA Issued (New)	Assmang Machadodorp
COA Issued (New)	Samancor FMT
COA Issued (New)	Glencore
COA Issued (New)	Samancor FMT
COA Issued (New)	Samancor FMT
COA Issued (New)	ARM Machadodorp
COA Issued (New)	Samancor Tubatse
COA Issued (New)	ARM Machadodorp
COA Issued (New)	Samancor Tubatse
PT Report	Samancor TAS
PT Report	Samancor Dikwena