RIO TINTO FER ET TITANE INC.
1655 RTE MARIE-VICTORIN
SOREL-TRACY, QUÉBEC, CANADA
J3R 4R4
TEL.: 450-746-5050 FAX: 450-743-0223

CERTIFICATE OF ANALYSIS

GRADE: ATOMET 28HC **LOT NUMBER:** 136107

CUSTOMER GG28HC

YOUR ORDER NUMBER:

OUR ORDER NUMBER:

CUSTOMER CODE:

PROPERTIES	RESULTS	SPECIFICATIONS Min.	SPECIFICATIONS Max.	METHODS
Apparent density, g/cm³	**3.03**	2.90	3.05	MPIF_04
Flow rate, s/50 g	**23.8**	---	30.0	MPIF_03
PARTICLE SIZE ANALYSIS OF IRON POWDER (1)				
U.S. MESH MICRONS				
+60 +250	**Trace**	---	0.1	ASTM_B822
-60 +70 -250 +212	**Trace**	---	0.2	ASTM_B822
-70 +100 -212 +150	**6.9**	---	12.0	ASTM_B822
-100 +325 -150 +45	**72.9**	---	---	ASTM_B822
-325 -45	**20.1**	15.0	30.0	ASTM_B822
CHEMICAL ANALYSIS OF IRON POWDER, %				
Carbon	**0.908**	0.850	0.950	ASTM_E_1019
Oxygen	**0.11**	---	0.25	ASTM_E_1019
Sulphur	**0.0055**	---	0.0140	ASTM_E_1019
COMPACTING PROPERTIES (2)				
Compacting pressure at 6.45 g/cm³, tsi	**40.4**	---	50.0	MPIF_45
Green strength at 6.45 g/cm³, psi	**1435**	1000	---	MPIF_15
SINTERED PROPERTIES				
Dimensional change from die size, %	**-0.29**	---	---	MPIF_44
Dimensional change, diff. from std, %	**0.00**	-0.10	0.10	MPIF_44
Transverse rupture strength, psi	**155793**	---	---	MPIF_41
T.R.S., difference from standard, psi	**-6396**	-15000	15000	MPIF_41
Hardness HRB	**59**	---	---	MPIF_43
Hardness, difference from standard HRB	**-2**	-8	8	MPIF_43

(1) Test method standardized according to MPIF-05 and ISO 4497
(2) Test mix: Fe - 0.75 Znst
Certificate of analysis according to DIN EN 10204-3.1

DATE: 2019-11-19

Maxime Pedneault, Quality Control Supervisor