

Analysis of limestone, water & instrument airLime-Stone:Absorbent

Absorbent Name	LIMESTONE
Grain Size	Medium
Bond Index	13kWh/short-ton

Type of Absorbent	<input checked="" type="checkbox"/> Rock <input type="checkbox"/> Powder <input type="checkbox"/> Slurry <input type="checkbox"/> Others :
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Feed Condition to Absorber	<input type="checkbox"/> Powder <input checked="" type="checkbox"/> Slurry 30 wt% <input type="checkbox"/> Others :
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Absorbent Composition		Limestone			Note
		Design	Normal	Guarantee	
CaCO ₃	wt%-d	79 (*1)	-	89 (*1)	
Dolomite(MgCa(CO ₃) ₂)	wt%-d	0	-	0	
	CaO	wt%-d	47-51.0 (*1)	-	-
	MgO	wt%-d	0.9-2.0	-	-
Inert	Cl ₂	wt%-d	<0.015	-	-
	Al ₂ O ₃	wt%-d	1.19-2.1	-	-
	Si ₂ O ₃	wt%-d	2.1-4.5	-	-
	Fe ₂ O ₃	wt%-d	0.45-1.0	-	-
	TiO ₂	wt%-d	<0.02	-	-
	Na ₂ O	wt%-d	<0.16	-	-
	K ₂ O	wt%-d	<0.01	-	-
	P ₂ O ₅	wt%-d	Traces	-	-
	LOI	wt%-d	39.0-41.3	-	-
	Total Sulphur	wt%-d	<0.1	-	-
	Mn ₂ O ₃	wt%-d	<0.12	-	-
Density	kg/m ³	1400			For volume
	kg/m ³	1700			For torque, drive calculation and structural load calculation

N/D : Not detectable

(*1) Design condition limestone purity CaCO₃ 79%; Guarantee condition limestone purity CaCO₃ 89%

Process Water:

		CW Blow down water (*1)		
		Normal (Stg-I)	Normal (Stg-II)	Maximum
Temperature at B.L.	deg.C	27	27	45
Pressure at B.L.	MPaG	-	-	-
pH	-	6.5-6.9	6.5-6.9	-
S.S.	mg/l	-	-	-
Composition				
Ca ²⁺	ppm CO ₃ Ca	237	316	-
Mg ²⁺	ppm CO ₃ Ca	219	292	-
Na ⁺	ppm CO ₃ Ca	195	260	-
K ⁺	ppm CO ₃ Ca	18	24	-
Oil and Grease	mg/l	-	-	-
N ₂ H ₄	mg/l	-	-	-
HCO ₃ ⁻	ppm CO ₃ Ca	-	-	-
CO ₃ ²⁻	ppm CO ₃ Ca	-	-	-
Cl ⁻	ppm CO ₃ Ca	189	252	-
SO ₄ ²⁻	ppm CO ₃ Ca	120	160	-
Silica	mg/l	45	60	-
To-NH ₄	mg/l	-	-	-
Fe ²⁺	mg/l	0.36	0.48	-
Cd	mg/l	-	-	-
NO ₃ ⁻	ppm CO ₃ Ca	6.6	8.8	-
B	mg/l	-	-	-
To-Inorganic	mg/l	-	-	-
Cu	microg/l	-	-	-
Hg	microg/l	-	-	-
Pb	microg/l	-	-	-
NO ₂ ⁻	microg/l	-	-	-
F ⁻	microg/l	-	-	-
Cr ⁶⁺	microg/l	-	-	-
Ni	microg/l	-	-	-
To-Zn	microg/l	-	-	-
BOD5	mg/l	-	-	-
COD Cr	mg/l	-	-	-
Total alkalinity	ppm CO ₃ Ca	120	120	-
Total Hardness	ppm CO ₃ Ca	-	-	-
Turbidity	NTU	4.5	6	-
Conductivity	micro m/m	-	-	-

(*1)CW blow down water Analysis is taken from tender documents Amendment No:CS-0011-109(3)-9-AMDT-TECH-01 & Annexure

Cooling WaterCooling Water

Water Source		DM Water					
		Available Value			Design Value		
		Minimum	Normal	Maximum	Minimum	Normal	Maximum
Supply Temp. at TP	deg.C	-	-	-	-	38	-
Return Temp. at TP	deg.C	-	-	-	-	45	-
ΔT	deg.C	-	-	-	-	10	-
Supply Press. at TP	MPaG	-	-	-	-	0.6(*1)	-
Return Press. at TP	MPaG	-	-	-	-	0.3(*1)	-

(*1) Assumed value

Instrument Air:

Air Source		-					
Dew Point (atmospheric)	deg.C	≤ -40					
Oil Mist Contamination		<input type="checkbox"/> Contaminated <input checked="" type="checkbox"/> Not Contaminated					
		Available Value			Design Value		
		Minimum	Normal	Maximum	Minimum	Normal	Maximum
Temperature at TP	deg.C	-	-	-	-	45(*1)	-
Pressure at TP	MPaG	-	-	-	0.55	-	0.8

(*1) In summer

Service Air

Air Source		-					
		Available Value			Design Value		
		Minimum	Normal	Maximum	Minimum	Normal	Maximum
Temperature at TP	deg.C	-	-	-	-	45(*1)	-
Pressure at TP	MPaG	-	-	-	0.55	-	0.8

(*1) In summer