



Sanghar Sugar Mills Limited

Sanghar/Sindhri Road, P.O. Box No.2, Sanghar.
Phone & Fax # (0235) 483426 Mob: (0345) 3737001 & 8222911

Date: 16.09.2013

To Whom It May Concern

We are pleased to certify that we have used successfully CarboUA FRS-W2 for removal of color from raw liquor at our plant during cane crushing season 2012-13.

Results so obtained are enumerated as under:

Comparative results of SSML refining process with and without FRS-W2.

Table No. 1

S. No.	Description	Melt liquor (IU)	Fine liquor (IU)	R1 Sugar (IU)	R2 Sugar (IU)	R3 Sugar (IU)
01	Previous process	860-890	400-425	45-60	60-75	75-95
02	Modified Process with CarboUA FRS-W2	700-780	280-310	28-32	44-58	60-75
03	Extra Color reduction % due to FRS-W2	15.4	28.5	42.8	24.4	20.5

Chemical cost comparison of SSML refining process with and without FRS-W2.

Table No. 2

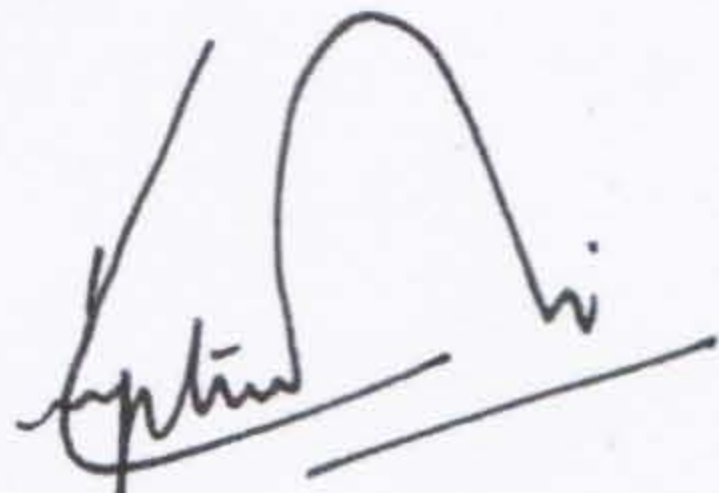
Previous Process (Phosphatation /Talofloc)			Modified Process (Phosphatation /Talofloc and CarboUA FRS-W2)	
Chemicals	Dosage Kg/ton sugar	Chemical Cost/ ton sugar *PKR	Dosage Kg/ton sugar	Chemical Cost/ ton sugar *PKR
Decolorizer	0.410	155.80	0.138	52.44
Phosphoric acid	0.426	44.73	0.190	19.95
FRS -W2	0	0	0.300	111.00
Total		200.53		183.39

* PKR = Pakistan Rupees = 98 = US\$ 1.0

From the Tables 1 & 2, it will be noted that with the use adsorbent FRS-W2, there was:

1. A reduction of 15.4 % Color in the melt liquor.
2. 28.5 % reduction in the Color of fine liquor.
3. 42.8 % color reduction in R1 sugar, 24.4 % color reduction in R2 sugar and 20.5 % color reduction in R3 sugar.
4. With the extra use of the adsorbent FRS-W2, the consumption of phosphoric acid reduced by 55 %, and Decolorizer reduced by 66 %.
5. The overall cost of use of chemicals reduced by 8.5 %.
6. There was also reduction in the use of wash water at centrifugals, which ultimately reduced re-circulation of sugar at Pans, reduction in steam consumption, etc.
7. Improved quality (99.85 pol) and low color sugar (27-75 IU) was produced.

This letter has been issued without undertaking any legal or financial obligation on our part.



Hayat-ur-Rahim Khan

Process Advisor

Sanghar Sugar Mills Ltd.