

ENERGY EFFICIENT TECHNOLOGY FOR MANUFACTURING OF SODA LIME SILICATE GLASS USING BORAX PENTAHYDRATE AND COLEMANITE

IPR STATUS

Patented in India, Turkey, Germany, Malaysia, Indonesia, China and EU

APPLICATIONS/USES

For manufacture of

- Soda Lime Silicate Glass
- Ophthalmic Glass
- Soda Lime Borosilicate Glass

And applications of all those glasses

SALIENT FEATURES

Significant reductions in melting temperature of SLS glass

Colemanite only reduces melting temperature by more than 100 °C

Borax pentahydrate (BPH) only reduces melting temperature by 200°C

Lowering of melting temperature reduces combustion of either natural gas or oil.

Environment friendly sustainable glass production

Carbon-free raw materials--minimization of the CO₂ emissions

Reduction in fuel consumption...Reduction of production costs

Faster melting processHigher production yields

Lower corrosion of furnace refractories due to lower melting temperature

Lower volatilization losses

Improvements in glass properties

One raw material like borax pentahydrate can supply Na₂O as well as B₂O₃ both

Colemanite can supply CaO and B₂O₃ both

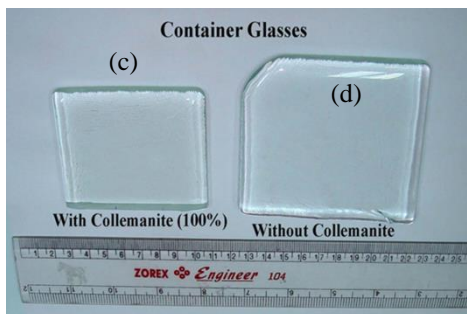
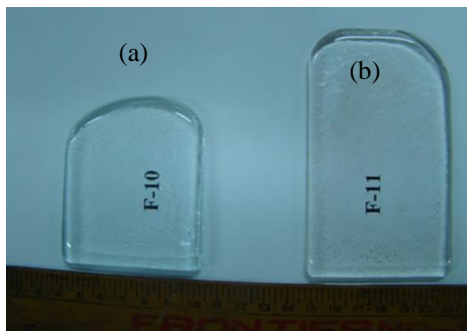
LEVEL/SCALE OF DEVELOPMENT

Soda lime silicate glass up to 500 g

Up to 500 kg scale can be demonstrated if required melting facility is made available

LINE MINISTRY MAPPING/USER SECTOR

Ministry of Heavy Industries/MSME



Soda lime silica float glass manufactured without BPH (a) and with BPH (b), container glass with colemanite (c) and without colemanite (d)

