



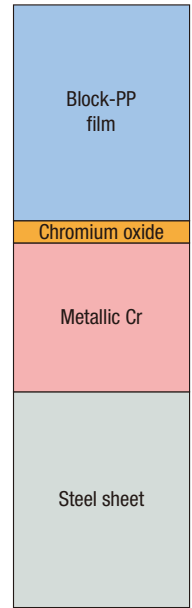
Can & Laminated Materials

Can & Laminated Materials Research Department takes charge of all fields of can material development, which include metallurgical technology for substrate steel sheets, and organic/inorganic chemistry for surface treatments. This integrated and specialized research system creates innovative solutions for can makers.

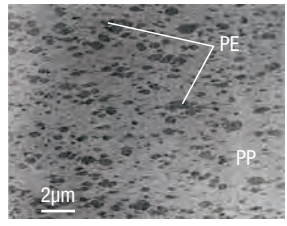
Plating Technology & Lamination Technology



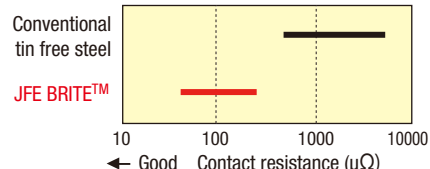
A 18 liter can made of laminated steel sheet "Universal Brite™ Type E"



Cross-sectional structure of Universal Brite™ Type E



Cross-sectional TEM image of block-polypropylene film

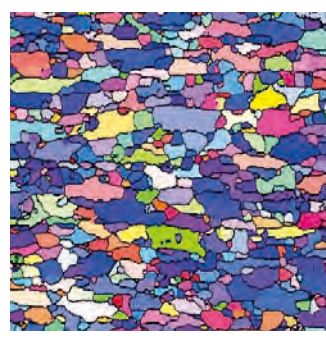


Comparison of weldability of JFE BRITE™ and tin free steel

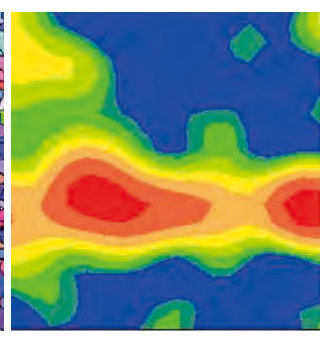
Integration of plating technology and lamination technology enables optimum design of the surface properties required for steel cans, such as formability, corrosion resistance, weldability, printability and durability. Universal Brite™ Type E (Ecology) is a unique hybrid of tin free steel with good weldability (JFE BRITE™) and block-polypropylene film with good corrosion resistance at bent part. This well-designed product meets the specific needs of 18 liter and pail cans.

Material Design Technology

Various performances such as formability or stiffness are required for steel can materials. JFE Steel satisfies customer's needs by optimization of chemical composition, microstructure (crystal orientation) and manufacturing conditions.



Crystal orientation map

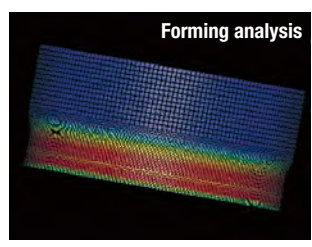


Preferred orientation (texture) showed by orientation distribution function (ODF)

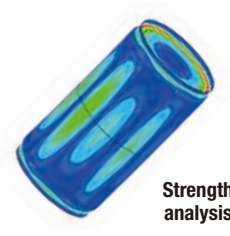
Crystal orientation analyses by electron backscattering pattern (EBSP)

Utilization & Evaluation Technologies

FEM analysis, forming tests, and various evaluation technologies are applied to respond to customer's requests such as designing of can shape or evaluating of can strength. These techniques also lead to proposals for new steel cans using new materials.



Forming analysis



Strength analysis

Analyses by Finite element method (FEM)



Forming test samples