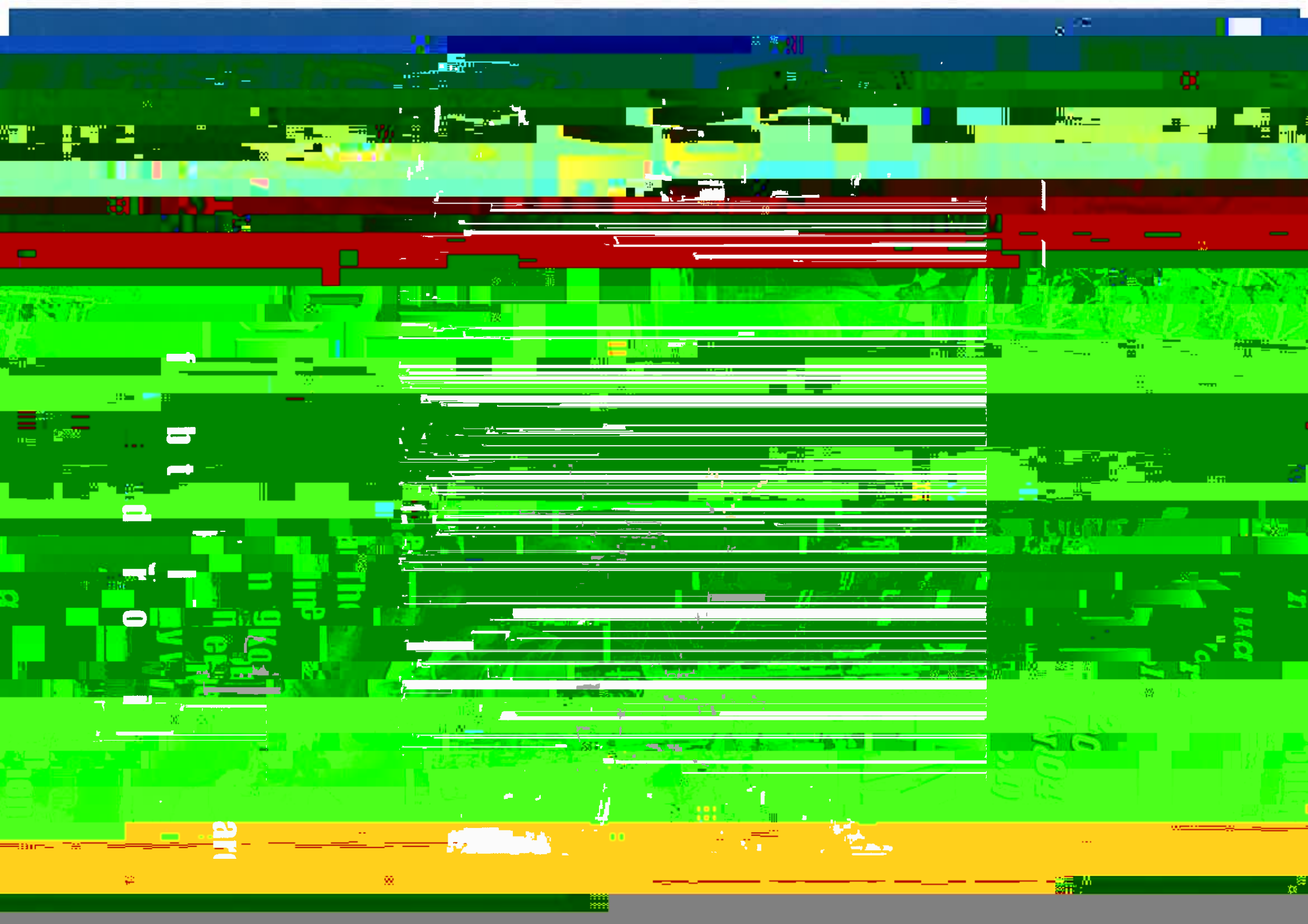


**Table 2. A selection guide to proper filler metals for heat-resistant low-alloy steels for power boilers**

Note (1) DW series wires use $CO_2$ or 75-85%Ar/bal. $CO_2$ for shielding, while DWA series wires use only 75-85%Ar/bal. $CO_2$ for better impact absorbed energy.
(2) MGS series wires use 95-98%Ar/bal. $O_2$ or 80-95%Ar/bal. $CO_2$ for shielding, while MG series wires use $CO_2$.
(3) TGS-XXXL series wires are of low carbon type.
(4) MF-38 is a fused type flux, whereas brands indicated with P

## Kobelco W-enhanced 9-12Cr steel filler metals offer unsurpassed performances

Kobe Steel has promoted the research and development of suitable filler metals for tungsten-enhanced 9-12Cr steels. **Table 3** shows typical chemical compositions and mechanical properties of the matching filler metals for 9Cr-W-V-Nb (ASTM A213Gr.T92 and A335Gr.T92) and 12Cr-W-V-Nb (ASME SA213Gr.T122 and SA335Gr.T122) steels.

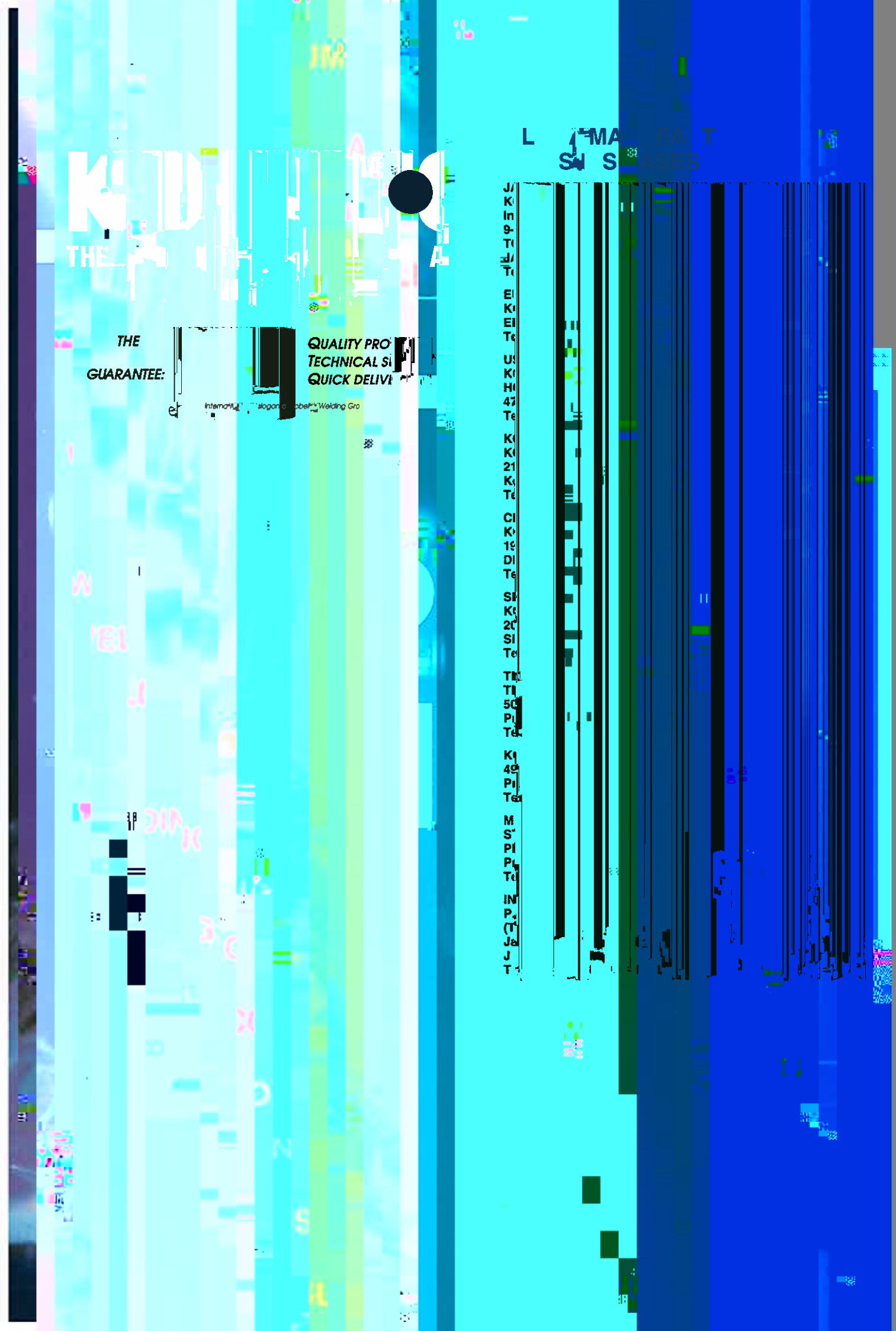
The sophisticated weld metal chemical formula, which was developed through in-depth research on the microstructure in conjunction with alloying elements such as Cr, Ni, Co and N, provides good notch toughness as well as adequate tensile properties by suppressing the residue of the $\delta$-ferrite phase. In addition, the W-enhanced 9-12Cr steel filler metals offer higher creep rupture strength in comparison with modified 9Cr-1Mo steel filler metals. This advantage can mainly be attributed to elaborate alloying with

## Joining dissimilar metals is unavoidable in welding power boiler components

As shown in Table 1, power boilers use various types of steel for both technical and economical reasons related to the service conditions such as service temperature and pressure. Therefore, dissimilar-metal

# KWT: a New Challenge for Expanding Kobelco ŝ Welding Business

KOBE WELDING OF TANGSHAN CO., LTD. (KWT) was established on November 1, 2002, and started production in September last year. During the first production year, MG-51T (AWS A5.18 ER70S-6), a solid wire that is used extensively in a Tc 0.10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