Thermal Debinding: A Balance of Efficiency and Safety

At CTB, we recognize that thermal debinding is a critical component of your manufacturing process, requiring the highest levels of safety and efficiency. That's why our kilns come with state-of-the-art features designed to optimize your process while strictly following the safety standards of EN 1539 for both Type A and Type B kilns.

Advanced Safety and Monitoring Systems

LEL Detector:
This advanced instrument continuously monitors the volatile organic compounds (VOCs) inside the kiln space and actively adjusts the volume exchange rates to ensure VOC concentrations remain within the safe limits specified by EN 1539. Should VOC levels surpass these limits for Type A kilns, the system deactivates the heat source and triggers an immediate nitrogen purge. This vital safety feature effectively reduces the kiln's oxygen concentration to prevent the risk of an explosion. However, the LEL controls are active only when the oxygen concentration is above 50% of the Limiting Oxygen Concentration (LOC) value. LOC defines the minimum oxygen concentration in a mixture of VOC, air, and inert gases at which ignition of the gas can take place. Below the threshold of 50% of the LOC value, the LEL controls can be deactivated as they are not needed for safety.

Laser O_2-Analyzer:
This instrument continuously measures the average "wet" oxygen concentration across the interior of the kiln, determining whether the kiln operates above (Type A) or below (Type B) the threshold of 50% of the LOC value. The Laser O_2-Analyzer can trigger a nitrogen purge if O_2 levels exceed the limits established by EN 1539 (50% of the LOC value), but only if the LEL detector also detects VOC concentrations above safe levels. This ensures a multi-layered approach to safety, allowing the kiln to operate under both EN 1539 Type A and Type B conditions simultaneously.

Commitment to EN 1539 Compliance
We are proud that our kilns meet the rigorous guidelines set by EN 1539, applicable to both Type A and Type B kilns. This means you can operate the kiln with the confidence that you are fully compliant with industry safety standards.

Enhanced Production Capabilities
The cutting-edge safety features of our kilns also offer an added advantage - they significantly reduce the firing cycle, enabling to increase production without compromising on safety or quality.