



KRN ALLOYS PVT. LTD.

PRODUCT DATA SHEET

Grade: KSP TW 100

Product Type: Sponge Reduced Iron Powder
(Thermal / Warmer Grade)

Category: Sponge Reduced Powder

1. PRODUCT DESCRIPTION

KSP TW 100 is a sponge reduced iron powder specifically developed for heat generation applications such as air-activated warmers and thermal packs.

The grade is engineered to provide controlled oxidation behavior, consistent heat output, and stable performance in systems where reliable thermal generation is required.

2. KEY CHARACTERISTICS

Property	Typical Value
Apparent Density	2.2 – 2.6 g/cc
Flow Rate (Hall)	30 – 40 sec/50g
Moisture	≤ 0.15 %
Oxygen (O ₂)	≤ 0.35 %

👉 (Aligned with sponge behavior but tuned for reactivity)

4. PHYSICAL PROPERTIES

Property	Description
Particle Structure	Porous / sponge-like
Production Route	Reduction process
Surface Area	High
Reactivity	Controlled and stable
Flow Behavior	Moderate

6. FUNCTIONAL BEHAVIOR

- Designed for controlled oxidation-based heat generation
- Provides consistent heat output over time
- Supports uniform reaction across the material mass
- Suitable for air-activated heating systems

👉 (This section differentiates this TDS — very important)

8. ADVANTAGES

- Controlled and predictable heat generation
- Consistent oxidation behavior
- Stable performance across batches
- Suitable for commercial warmer formulations
- Adaptable to different formulation requirements

10. PACKAGING & SUPPLY

- **Standard packing:** 25 kg bags / jumbo bags
- Custom packaging available upon request

3. CHEMICAL COMPOSITION (%)

Element	Typical (%)
Fe (Iron)	Balance
C (Carbon)	≤ 0.05
O (Oxygen)	≤ 0.35
Others	Controlled within standard manufacturing limits

5. PARTICLE SIZE DISTRIBUTION (PSD)

Fraction	Typical Distribution (%)
+100 mesh (>150 μm)	2 – 6
-100 +200 mesh	25 – 40
-200 +325 mesh	35 – 50
-325 mesh (<45 μm)	10 – 20

* Particle size distribution is controlled to balance reactivity, airflow exposure, and uniform heat generation.

👉 (Not too fine, not too coarse — this balance is critical)

7. TYPICAL APPLICATIONS

- Hand warmers
- Body warmers
- Heat packs
- Air-activated thermal systems

9. PROCESSING GUIDELINES

- Typically used in combination with moisture, salt, and air-permeable systems
- Requires controlled packaging for activation timing
- Recommended storage in dry conditions

11. DISCLAIMER

Values are typical and may vary depending on formulation design and application conditions. This information is intended as a general guide and does not constitute a strict specification guarantee. Users are advised to evaluate the material for their specific intended use.