



Technical Data Sheet
(EB - B108)
Bacillus infantis

1. Taxonomy:

- Domain: Bacteria
- Phylum: Firmicutes
- Class: Bacilli
- Order: Bacillales
- Family: Bacillaceae
- Genus: Bacillus
- Species: Bacillus infantis

2. Microscopic Appearance:

- Gram stain: Positive
- Morphology: Rod-shaped bacterial cells
- Size: 0.8–1.2 μm $\times$ 2.0–4.0 μm
- Arrangement: Single or short chains
- Motility: Motile
- Spore Formation: Likely spore-forming (genus characteristic)

3. Culture Description:

- Growth Medium: Nutrient agar / Bacillus selective media
- Incubation Conditions: Aerobic at 30–37°C for 24–48 hours
- Colony Morphology: Cream-colored, smooth to slightly rough colonies

4. Physiological Characteristics:

- Oxygen Requirement: Aerobic / Facultative anaerobe
- Temperature Range: 25–40°C
- pH Range: 6.0–8.0
- Environmental Resistance: Moderate to high (Bacillus genus trait)
- Metabolism: Heterotrophic

5. General Functional Attributes:

- Isolation: Reported from clinical sources (e.g., neonatal samples)
- Pigmentation: Some strains show orange pigmentation
- Virulence Factors: Genomic studies suggest presence of adhesins and invasions

- Clinical Relevance: Associated with opportunistic infections in literature

6. Test Specifications:

- Appearance: Off-white to light beige powder
- Odor: Characteristic
- Moisture Content: $\leq 7\%$
- Viable Cell Count: 1–200 Billion CFU/g
- Mesh Size: NLT 90 % passes through 60 mesh #

7. Pathogen and Contaminant Testing:

- *Salmonella* spp.: Absent in 25g
- *Escherichia coli*: Absent in g
- *Staphylococcus aureus*: Absent in g
- *Pseudomonas aeruginosa*: Absent in g
- Yeasts and Molds: <100 CFU/g
- Coliforms: Absent in g

8. Heavy Metals Analysis:

- Lead (Pb): <1.0 ppm
- Arsenic (As): <0.5 ppm
- Cadmium (Cd): <0.5 ppm
- Mercury (Hg): <0.1 ppm

9. Packaging and Storage:

- Packaging: Aluminium foil laminated bags / HDPE drums
- Storage Conditions: Store at $\leq 25^\circ\text{C}$ in a dry, dark place
- Shelf Life: Depends on handling conditions

10. General Applications:

- Microbiological research
- Genomic and pathogenicity studies
- Comparative Bacillus species analysis

11. Stability Overview (General Bacillus Behavior – Not Validated):

Condition	Observation
Heat	Likely moderate stability
Acid	Unknown/not validated
Bile	Unknown/not validated
Storage	Stable under controlled lab conditions

12. Acid & Bile Tolerance:

- No validated probiotic data available
- Not intended for gastrointestinal application

13. Quality Control and Monitoring:

- Identification via molecular methods (16S rRNA sequencing recommended)
- Purity testing required
- Biosafety precautions advised

14. Regulatory Status:

- Not GRAS
- Not EFSA approved
- Not approved as probiotic ingredient



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