

Technical Data Sheet (TDS)

- Feed Grade Saccharin

Issue Date: 24 FEB 2026 | Version: V1.0

1. Product Overview

- **Product Name:** Saccharin (Feed Grade)
- **CAS Number:** 81-07-2 | **Molecular Formula:** C₇ H₅ NO₃S | **Molecular Weight:** 183.18 g/mol
- **Chemical Nature:** A non-nutritive, high-intensity sweetener. It is 300-500 times sweeter than sucrose (table sugar) but has a slight bitter aftertaste.
- **Core Characteristics:** High sweetness intensity, excellent thermal stability, low dosage requirement, cost-effective, and compliant with global feed safety regulations.
- **Core Application:** As a feed palatability enhancer for pigs, poultry, aquaculture (fish/shrimp) and ruminants. It masks the bitter taste of certain feed ingredients (e.g., vitamins, minerals, medications) and increases feed intake, especially in young animals.

2. Technical Specifications (Feed Grade)

Item	Standard Requirement	Test Method
Assay (Saccharin)	≥99.0%	Volumetric Titration
Appearance	White crystalline powder, odorless	Visual Inspection
Melting Point	226-230°C	Melting Point Apparatus
pH Value (1% Aqueous, 25°C)	4.0-6.0	Digital pH Meter
Loss on Drying	≤0.5%	105°C Constant Weight Method
Residue on Ignition	≤0.1%	600±50°C Ignition Method
Heavy Metals (as Pb)	≤1 ppm	Atomic Absorption Spectrometry (AAS)
Arsenic (As)	≤0.5 ppm	Atomic Fluorescence Spectrometry (AFS)
Total Bacterial Count	≤10 CFU/g	Plate Count Method
E. coli / Salmonella	Negative	Microbiological Detection
Particle Size (Typical)	80-120 mesh (customizable)	Sieve Analysis

3. Product Advantages (Feed Grade Focus)

1. **Powerful Palatability Enhancement:** 300-500 times sweeter than sucrose, effectively masks the unpleasant taste of synthetic amino acids, minerals and medicinal additives in compound feed.
2. **Boosts Feed Intake:** Significantly increases the feed intake of weaned piglets, young poultry and aquatic animals, reducing feed waste and improving breeding efficiency.
3. **Excellent Stability:** Heat-stable during feed pelleting and extrusion processes (resistant to temperatures up to 200°C). Does not decompose or lose sweetness in acidic or neutral feed environments.
4. **Cost-Effective:** Ultra-low dosage requirement (ppm level) results in minimal additional cost to the feed formula while delivering significant performance benefits.
5. **Regulatory Compliance:** Approved for use in major global markets with strict maximum residue limits (MRLs) established to ensure animal product safety.

4. Application & Dosage Guide (Feed Formulation)

4.1 Target Species & Core Benefits

- **Weaned Piglets:** Alleviates weaning stress, increases feed intake, promotes gut health and weight gain.
- **Poultry (Broilers/Layers):** Improves feed acceptance, especially for low-cost diets containing high levels of by-products.
- **Aquaculture (Fish/Shrimp):** Enhances feed palatability, reduces feed leaching and improves feed conversion ratio (FCR).

- **Medicated Feed:** Masks the bitter taste of antibiotics and antiparasitics, ensuring animals consume the full therapeutic dose.

4.2 Recommended Inclusion Levels (w/w, based on total compound feed)

表格

Species	Growth/Production Stage	Recommended Dosage of Saccharin
Pigs	Weaners (7-30 kg)	50-200 ppm (0.005%-0.02%)
Pigs	Growers/Finishers	20-50 ppm (0.002%-0.005%)
Poultry	Chicks/Pullets	10-30 ppm (0.001%-0.003%)
Aquaculture	Fish/Shrimp (All Stages)	30-100 ppm (0.003%-0.01%)
Medicated Feed	All Species	100-300 ppm (0.01%-0.03%)

Note: Adjust dosage based on the palatability of the basal diet and the presence of bitter-tasting ingredients.

5. Handling & Formulation Guidelines

1. **Premixing is Essential:** Due to the very low dosage, premix saccharin with a carrier (e.g., corn starch, wheat middlings) at a ratio of 1:100 to 1:500 first. This "premix" is then added to the main feed batch to ensure uniform distribution.
2. **Compatibility:** Compatible with all common feed ingredients including amino acids, vitamins, minerals, probiotics and enzymes. Avoid direct mixing with strong oxidizing agents or strong bases in high-temperature environments.
3. **Processing Tips:** Can be added at any stage of feed production (mixing or pelleting). Its thermal stability allows it to withstand the high temperatures of aquatic feed extrusion.
4. **Combination Use:** For optimal taste, it is often used in combination with other sweeteners (e.g., sucralose) or flavor enhancers to eliminate the slight bitter aftertaste.

6. Packaging, Storage & Shelf Life

- **Packaging Specifications:**
 - **Standard Packaging:** 25 kg moisture-proof paper drum, with double food-grade PE inner liners (sealed to prevent moisture and dust).
 - **Bulk Packaging:** 500 kg / 1000 kg jumbo bags (for large feed mills, with inner liners).
 - **Sample Packaging:** 10 g / 50 g HDPE plastic bottles (sealed, for quality testing).
- **Storage Requirements:**
 - Store in a cool, dry, well-ventilated warehouse; temperature $\leq 25^{\circ}\text{C}$, relative humidity $\leq 60\%$.
 - Keep the package tightly sealed at all times to prevent moisture absorption and caking. Caked product can be crushed and reused without loss of sweetness.
 - Shelf Life: **36 months (unopened, under specified conditions);** 12 months after opening (if resealed tightly).
- **Transportation Requirements:** Classified as non-hazardous goods. Transport in covered, dry ordinary cargo vehicles. Protect from sunlight, rain and high temperature. Prevent package damage and dust dispersion during transit.

7. Quality Assurance & Control

1. **Production Standards:** Produced in a GMP-compliant facility with ISO 9001 (Quality) and ISO 22000 (Food Safety) certifications. The production process is closed to prevent contamination.
2. **Batch Testing:** Every batch undergoes rigorous testing for assay, purity, heavy metals and microbiology in an internal laboratory. A detailed English COA is provided with each shipment.