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Technical Data Sheet (TDS)

- Feed Grade Anhydrous Glucose (50-99-7)
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1. Product Overview

- **Product Name**: Anhydrous Glucose (Feed Grade)
- **CAS Number**: 50-99-7
- **Molecular Formula**: $C_6H_{12}O_6$ | **Molecular Weight**: 180.16 g/mol
- **Chemical Classification**: Monosaccharide, essential energy nutrient
- **Core Characteristics**: High purity (≥99.0%), white crystalline powder, slightly sweet taste, freely water-soluble, slightly hygroscopic, stable under feed processing conditions. Non-toxic, fully biodegradable, acts as a rapid energy supplement and feed sweetener for animals. Compliant with GB/EU/FDA feed safety standards, suitable for all livestock, poultry and aquaculture animals.

2. Technical Specifications (Feed Grade, Compliant with GB 13078.1-2017)

Item	Standard Requirement	Test Method
Appearance	White crystalline powder, free-flowing, odorless	Visual & Olfactory Inspection
Anhydrous Glucose Assay	≥99.0%	High Performance Liquid Chromatography (HPLC)
Moisture Content	≤0.5%	Karl Fischer Titration
pH Value (5% aqueous, 25℃)	4.0-6.5	Digital pH Meter
Reducing Sugar (as glucose)	≥99.0%	Titrimetric Method (Fehling's reagent)
Residue on Ignition	≤0.1%	Gravimetric Method (600±50℃)
Heavy Metals (as Pb)	≤5 ppm	Atomic Absorption Spectrometry (AAS)
Arsenic (As)	≤2 ppm	Atomic Fluorescence Spectrometry (AFS)
Cadmium (Cd)	≤1 ppm	AAS
Mercury (Hg)	≤0.1 ppm	Cold Vapor Atomic Absorption
Total Bacterial Count	≤100 CFU/g	Plate Count Method
E. coli	Negative	Microbiological Detection
Salmonella	Negative in 25g	GB 13078.1 Method
Bulk Density	0.60-0.80 g/cm³	Volumetric Method
Water Solubility	≥90 g/100 mL (25℃)	Visual/Volumetric Method

3. Product Advantages (Feed Grade Focus)

1. **Rapid Energy Supply**: Monosaccharide that is directly absorbed and utilized by animal intestines without hydrolysis; provides instant energy for metabolism, ideal for young, stressed and high-yield animals.
2. **Improves Palatability**: Mild sweet taste enhances feed flavor, increases animal feed intake, especially effective for low-palatability compound feeds and young animals with poor appetite.
3. **High Purity & Bioavailability**: ≥99.0% pure, no inert impurities, 100% bioavailable; no digestion burden for animals, suitable for all growth stages.
4. **Nutrient Fortification**: Supplements carbohydrate nutrients in feed, balances feed nutrient ratio, improves feed conversion rate (FCR) and animal growth rate.

4. Application & Dosage Guide (Feed Formulation)

4.1 Target Species & Core Benefits

- **Swine**: Rapid energy for weaned piglets (relieves weaning stress, reduces diarrhea); improves sow lactation and litter vitality; boosts finisher weight gain and feed conversion.
- **Poultry**: Enhances chick vitality and survival rate; improves layer egg production and laying persistence; increases broiler growth rate and feed intake.

- **Ruminants**: Supplements energy for calves/sheep (promotes rumen development); improves dairy cow milk production and milk fat rate; boosts beef cattle fattening efficiency.

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

Species	Growth/Production Stage	Recommended Dosage	Core Effect
Swine	Weaned Piglets (0-30 kg)	2.0-5.0%	Relieve stress + increase intake
Swine	Growers/Finishers (30-120 kg)	1.0-3.0%	Energy supplement + improve FCR
Swine	Sows (Gestation/Lactation)	3.0-6.0%	Enhance lactation + litter vitality
Poultry	Chicks/Ducklings (0-21 days)	2.0-4.0%	Boost vitality + survival rate
Poultry	Layers (Egg production)	1.0-2.0%	Improve egg production + palatability
Poultry	Broilers (Finisher)	1.0-3.0%	Increase growth rate + feed intake
Ruminants	Calves/Young Sheep	2.0-4.0%	Promote rumen development + energy supply
Ruminants	Dairy Cows (Lactation)	1.0-3.0%	Improve milk production + milk fat
Aquaculture	Fry/Fingerlings	3.0-6.0%	Promote development + survival rate
Aquaculture	Adult Fish/Shrimp	2.0-4.0%	Increase growth rate + stress resistance

5. Handling & Formulation Guidelines

1. **Premixing is Recommended**: Premix anhydrous glucose with an inert carrier (corn starch, wheat middlings) at a ratio of 1:5 to 1:10 to create a premix; ensures uniform distribution in the main feed batch and prevents hygroscopic caking.
2. **Dry Handling**: The product is slightly hygroscopic; use dry equipment/tools for weighing and mixing. Avoid contact with water during feed production to prevent caking and poor flowability.
3. **Processing Timing**: Can be added at any stage of feed production (mixing/pelleting); stable under high-temperature pelleting (≤120℃), no need for post-cooling addition.

6. Packaging, Storage & Shelf Life

- **Small Packaging**: 1 kg/5 kg moisture-proof aluminum foil bags (for small feed mills/premix manufacturers)
- **Standard Packaging**: 25 kg moisture-proof PP woven bags with double PE inner liners (industrial use, anti-hygroscopic)
- **Bulk Packaging**: 500 kg/1000 kg jumbo bags with inner PE liners (for large feed mills, closed loading/unloading)

7. Quality Assurance & Control

1. **Production Standards**: Produced in a GMP-compliant facility with ISO 9001 (Quality Management) and ISO 14001 (Environmental Management) certifications. Adopt closed crystallization and drying process to ensure high purity and low moisture; raw materials meet feed grade food safety standards.
2. **Batch Testing**: Every batch undergoes rigorous testing for purity, moisture, reducing sugar, heavy metals, microbiology and physical-chemical properties. A detailed English COA is provided with each shipment, including solubility and activity test data.