

## Technical Data Sheet (TDS)

### - H.A.P (Hydrolyzed Animal Protein) (Food Grade)

Issue Date: 20 FEB 2026 | Version: V1.0

#### 1. Product Overview

- **Product Name:** H.A.P (Hydrolyzed Animal Protein) (Food Grade)
- **CAS Number:** N/A
- **Formula:** Natural food-grade animal protein hydrolysate (blend of free amino acids and small molecular peptides, 100-5000 Da)
- **Molecular Weight:** 100-5000 Da (predominantly <1000 Da, high water solubility)
- **Product Characteristics:** Food-grade hydrolyzed animal protein prepared by enzymatic hydrolysis of high-quality natural animal protein (non-GMO, food grade). It is a pale yellow free-flowing powder with a mild characteristic meaty aroma; fully water-soluble, high degree of hydrolysis, rich in free amino acids and small peptides. As a natural food additive, it functions as a **flavor enhancer, nutrient fortifier and taste improver**; it can enhance meaty/umami flavor, improve taste layering, fortify protein/nitrogen nutrition, and is stable under normal food processing conditions. Non-toxic, environmentally friendly, fully biodegradable, compliant with national/international food additive standards.
- **Core Application:** Food additive for meat products, sauces/seasonings, instant food, bakery, dairy, beverage, snack food and condiment industries.

#### 2. Technical Specifications (Compliant with National Food Additive Standards)

Item	Standard Requirement
Appearance	Pale yellow to light brown amorphous powder; free-flowing
Odor	Characteristic mild meaty aroma; no off-flavor
Total Nitrogen Content	≥ 12.0%
Degree of Hydrolysis	≥ 80.0%
Moisture Content	≤ 5.0%
Ash Content	≤ 8.0%
pH Value (1% aqueous, 25°C)	5.0-7.0
Heavy Metals (as Pb)	≤ 5 ppm
Heavy Metals (As)	≤ 1 ppm
Cadmium (Cd)	≤ 0.1 ppm
Mercury (Hg)	≤ 0.01 ppm
Total Bacterial Count	≤ 1000 CFU/g
E. coli	Negative
Salmonella	Negative in 25g
Coliforms	≤ 30 MPN/100g
Water Solubility (25°C)	Fully soluble (1% solution: clear/slightly turbid)
Bulk Density	0.45-0.65 g/cm <sup>3</sup>
Temperature Stability	Stable at 0-80°C (no loss of flavor/nutrition; ≤60°C recommended for long-term use)
pH Stability	Stable at pH 4.0-8.0 (flavor/activity retention ≥95%)

#### 3. Product Advantages

1. **Natural & Food-Grade:** Enzymatic hydrolysis of high-quality food-grade animal protein; no chemical additives, non-GMO, compliant with GB 2760/FDA/EC standards; safe for human consumption.
2. **Dual Functional Value:** Integrates **flavor enhancement** and **nutrient fortification**; enhances meaty/umami flavor (no bitter aftertaste) and fortifies protein/nitrogen nutrition (rich in free amino acids/small peptides, easy to absorb).

3. **High Solubility & Hydrolysis:** Fully water-soluble (no precipitation), degree of hydrolysis  $\geq 80\%$ ; uniform dispersion in food systems (liquid/solid), no impact on product texture/appearance.

#### 4. Application Fields & Recommended Dosage

(Adjust dosage according to food type, flavor requirement and production process; all dosages are **w/w** based on food raw materials)

Application Field	Typical Products	Recommended Dosage	Core Effect
Meat Products	Sausage, ham, meatball, canned meat, cured meat	0.5-3.0%	Enhance meaty flavor, improve juiciness/tenderness, reduce salt usage
Sauces & Seasonings	Soy sauce, oyster sauce, compound seasoning, soup base, marinade	1.0-5.0%	Boost umami/meaty flavor, improve taste layering, enhance flavor stability
Instant Food	Instant noodles, instant porridge, instant soup, frozen food	0.3-2.0%	Enrich flavor, improve aftertaste, fortify nutrition
Bakery & Pastry	Meat floss bread, savory cake, snack pastries	0.2-1.0%	Add savory/meaty note, improve taste coordination
Dairy & Beverage	Nutritional milk, protein beverage, savory drink	0.1-0.5%	Fortify protein nutrition, improve taste mellowness (no impact on flavor)
Snack Food	Savory chips, meat snacks, protein bars	0.3-1.5%	Enhance savory/meaty flavor, improve taste layering
Condiments	Bouillon cube, seasoning powder, sauce paste	2.0-8.0%	Core flavor enhancer, boost umami/meaty taste, reduce other additives

#### 5. Usage Methods & Formulation Guidelines

- Premixing Recommended:** For solid food systems (seasoning powder, bakery flour), premix HAP with other dry ingredients (sugar, salt, starch) at a ratio of 1:10-1:20 to ensure uniform dispersion; avoid direct mixing with high-moisture ingredients (prevents caking).
- Dissolution Method:** For liquid food systems (sauce, soup base, beverage), dissolve HAP in warm deionized water (40-60°C) with stirring (10-20% w/v solution) to form a clear stock solution, then add to the food system; stir evenly for full dispersion.
- Processing Timing:** Add at the **middle/early stage** of food processing (e.g., meat marinating, sauce boiling); for high-temperature sterilization ( $\leq 121^\circ\text{C}$ ), add before sterilization (no activity loss for short-time high temperature).

#### 6. Packaging, Storage & Transportation

- Small Packaging: 1 kg/5 kg food-grade aluminum foil bags (inner PE liner, sealed; for small food factories/laboratory use)
- Standard Packaging: 25 kg food-grade HDPE plastic drums (sealed, with inner PE bag; for industrial batch production)
- Bulk Packaging: 500 kg/1000 kg food-grade jumbo bags (sealed, dust-proof; for large food factories/bulk purchase)
- Custom Packaging: Available upon request (specific weight/size for special food production).

#### 7. Quality Assurance & Technical Support

- Production Standards:** Manufactured in a GMP-compliant food-grade production workshop; comply with ISO 9001 (Quality Management System) and ISO 22000 (Food Safety Management System); enzymatic hydrolysis process is green, no chemical pollution.
- Batch Testing:** Every batch of HAP is subject to strict quality testing (physical, chemical, microbiological); a detailed Certificate of Analysis (COA) is provided with each shipment to ensure compliance with national/international food additive standards.