TECHNICAL DATA SHEET

Chondroitin Sulfate (Bovine)

Natural Glycosaminoglycan | Food Grade

This Technical Data Sheet is issued by KEEP INGREDIENTS CO. LTD for the evaluation of the product described herein. The supplier and the customer undertake to maintain the CONFIDENTIAL information contained or enclosed in this document.

1. TECHNICAL DATA SHEET

Product Description

Chondroitin Sulfate (Bovine) is a natural glycosaminoglycan derived from bovine bone. It is produced by cooking extraction combined with enzymatic hydrolysis, followed by filtration, oxidation bleaching, alcohol precipitation, centrifugal dewatering and drying. The product is a white to off-white free-flowing powder with no visible impurities, manufactured in accordance with USP 43.

Product Information

Item	Information
Product name	Chondroitin Sulfate (Bovine)
Product source	Bovine (bovine bone)
CAS No.	9082-07-9
Product form	White to off-white free-flowing powder, no visible impurities
Assay	90.0%-105.0% (by CPC, on dried basis)
Particle size	100% through 80 mesh
Bulk density	> 0.48 g/mL
Applicable standard	USP 43
Shelf life	2 years (unopened packaging)
Packing	25 kg/drum
Storage	Cool and dry place
Country of origin	China



2. PRODUCT SPECIFICATION

2.1 Characters & Identification

Item	Standard
Appearance	White to off-white free-flowing powder, no visible impurities
Identification (IR)	Conforms to reference standard
Identification (sodium salt)	Meets the requirements of the tests for sodium

2.2 Physical & Chemical Specifications

Item	Standard
Assay (by CPC, on dried basis)	90.0%-105.0%
Loss on drying	≤ 10.0%
Particle size	100% through 80 mesh
Bulk density	> 0.48 g/mL
Protein (on dried basis)	≤ 6.0%
pH (1 in 100 solution)	5.5-7.5
Clarity & color of solution (5% concentration)	Absorbance ≤ 0.35 (420 nm)
Electrophoretic purity	Not more than 2% of any individual impurity
Specific rotation	-20.0 to -30.0
Chloride	≤ 0.50%
Sulfate	≤ 0.24%
Residue on ignition (on dried basis)	20.0-30.0%

2.3 Microbiological Specifications

Item	Standard
Total Plate Count	< 1000 CFU/g
Yeasts and molds	< 100 CFU/g
E. coli	Negative
Salmonella	Negative



3. PROCESS CHART

The product is manufactured from bovine bone by cooking extraction combined with enzymatic hydrolysis (1% alkaline protease), followed by filtration, oxidation bleaching, alcohol precipitation, centrifugal dewatering and drying.

Raw Material Acceptance (bovine bone)

▼

Dry Material Soaking

▼

Cooking Extraction

▼

Cooling & Skimming

▼

Enzymolysis (add 1% alkaline protease, adjust pH 8.0-8.5, hydrolyze 6-8 hours; adjust to pH 6.0, heat to 80 °C, rest 30 min)

▼

Standing & Layer Separation

▼

Filtration

▼

Oxidation Bleaching

▼

Secondary Filtration

▼

Alcohol Precipitation

▼

Centrifugal Dewatering

▼

Drying

▼

Finished Product



4. ANALYTICAL DATA

Item	Data
Product name	Chondroitin Sulfate (Bovine)
Test basis	USP 43
Assay (sodium chondroitin sulfate)	98.2% (USP 43 <121>)

4.1 Analytical Results

Item	Result
Assay (sodium chondroitin sulfate, USP <121>)	98.2%
Total aerobic microbial count (TAMC)	< 10 CFU/g
Total yeast & mold count (TYMC)	< 10 CFU/g
E. coli	Not detected
Salmonella	Not detected
Lead (Pb)	0.8 ppm
Cadmium (Cd)	< 0.1 ppm
Arsenic (As)	1.2 ppm
Mercury (Hg)	< 0.05 ppm

Note: A batch-specific Certificate of Analysis accompanies each consignment.



5. NUTRITIONAL INFORMATION

Nutritional information per 1 g of Chondroitin Sulfate (Bovine).

Test item	Unit	Test result
Energy	kcal/g	3.36
Protein	g/g	0.03
Fat	g/g	0
Carbohydrate	g/g	0.81
Sugars	g/g	0
Sodium	mg/g	0.09



6. APPLICATIONS

Chondroitin sulfate is a naturally occurring glycosaminoglycan that is commonly used as an ingredient in dietary supplements and functional foods, particularly in formulations designed to support joint and cartilage health.

Field	Typical use
Dietary supplements	Joint and cartilage health support formulations (capsules, tablets, powders)
Functional foods	Food and beverage formulations for joint/cartilage health positioning

Note: end-users shall confirm final-formula compliance, appropriate usage dosage and labelling requirements under the regulations of the country of use.

7. PRODUCT STATEMENTS

7.1 Non-Irradiation / Non-Ionized Statement

NON-IRRADIATION / NON-IONIZED STATEMENT

We hereby certify that the product has not been sterilized by ionizing radiation at any point during the entire manufacturing process and therefore is in full compliance with the relevant legislated regulations, Directives 1999/2/EC & 1999/3/EC, concerning foods and food ingredients treated with ionizing radiation.

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7.2 Heavy Metals Statement

HEAVY METALS STATEMENT

According to the supplied analytical test data, the heavy metal content of this product is: lead (Pb) 0.8 ppm, cadmium (Cd) < 0.1 ppm, arsenic (As) 1.2 ppm and mercury (Hg) < 0.05 ppm.

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7.3 Country of Origin

COUNTRY OF ORIGIN

The product is produced and packaged in China. Country of origin: China.

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7.4 Expected Usage

EXPECTED USAGE

The expected usage of this product is its incorporation as a food additive / dietary supplement ingredient in conventional foods, dietary supplements and functional foods, subject to the regulations of the country of use.

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8. HANDLING, STORAGE & TRANSPORT

Item	Information
Storage	Stored in a cool, dry and well-ventilated place; keep the container tightly closed.Store away from high temperature and humidity.
Handling	Ensure good ventilation at the workplace; wash thoroughly after handling. Avoid contact with eyes and skin.
Transport	Keep dry and away from direct sunlight; avoid high temperature and humidity.
Hazard classification	Not classified as hazardous according to GHS (physical, health and environmental hazards: not classified).
Transport regulation	Not regulated for transport (DOT / IATA / IMDG).
Shelf life	2 years (unopened packaging).
Packaging	25 kg/drum.

Safety notes: This product is a food raw material and not a medicine. No occupational exposure limit (PEL/TLV) has been established for this substance; the material is stable under normal conditions. A Safety Data Sheet (SDS) is available upon request. Keep out of reach of children.

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Authorized signature & company stamp

This Technical Data Sheet is issued by KEEP INGREDIENTS CO. LTD and is valid together with the supplied Certificate of Analysis. The information given is based on our knowledge of the product at the time of publication and is given in good faith; it does not exempt the user from applying the regulations governing the use, storage and labelling of the product in their own country. A Material Safety Data Sheet (MSDS) is available upon request.

