

Material Safety Data Sheet

AGAR – AGAR E – 406 Food, Bacteriological and Pharmaceutical Grade

By the Approved Code of Practice [CHIP3] for Chemicals (Hazard information and Packaging for supply) Regulations 2002 every safety data sheet should contain the following obligatory headings:

- **Identification of the substance/ preparation and company /undertaking**

Agar-Agar INS. Nr.406; EC Nr.E406; C.A.s Nr.: 9002-18-0; EINECS Nr: 232-658-1

- **Intra – Laboratories, Unit 5 Devonshire Meadows, Broadley Park Road, Plymouth**
- **Composition/information on ingredients**

Dried hydrophillic colloid extracted from Gelidium Sesquipedale specie. Polygalactoside formed by 60% to 90% of D-Galactose molecules, and 10% to 40% of L-Galactose molecules. On about every tenth D-Galactopyranose unit, one of the groups – CH₂OH or CHOH- is esterificated with one molecule of sulphuric acid; from the ester obtained, the salt is formed substituting the remaining atom of hydrogen of the sulphuric acid by calcium, magnesium, potassium or sodium.

- **Hazards identification**

Slightly hazardous in case of eye contact (irritant), of ingestion, of inhalation. Chronic exposure: No adverse health effects expected. Lab protective equipment: Lab protective eye-protection glasses.

- **First-aid measures**

Inhalation: Not expected to require first aid measures. Remove to fresh air. Get medical attention for any breathing difficulty.

Ingestion: Not expected to require first aid measures. If large amounts were swallowed, give water to drink and get medical advice.

Skin contact: Not expected to require first aid measures. Wash exposed area with soap and water. Get medical advice if irritation develops.

Eye contact: Not expected to require first aid measures. Wash thoroughly with running water. Get medical advice if irritation develops.

- **Fire-fighting measures**

Flash Point: Minimum. Explosion: Not considered to be a hazard. In case of fire, any extinguishing media may be applied (water, foam,CO2)

- **Handling and storage**

Handling: Respiratory and eye protection: It is recommended the use of breathing masks and eye-protection glasses.

Best Storage: In tight closed package, dry conditions and in odour free areas.

- **Exposure controls/personal protection**

Exposure limits: None established. Ventilation system: Not expected to require any special ventilation. Personal respirators: Not expected to require any personal respirator usage. Skin Protection: Wear protective gloves and clean body-covering clothing. Eye Protection: Use chemical safety goggles; maintain eye wash fountain.

- **Physical and chemical properties**

Water Absorption: Lower or equal to 75 ml. (Depending on method)

Moisture: Lower or equal to 22% (Depending on method)

Total Ash: Lower or equal to 6.0% (Depending on method)

Acid-insoluble ash: Lower or equal to 0.5% (Depending on method)

Not soluble substance: Lower or equal to 1.0% (Depending on method)

Starch and Dextrines: Not detected. (Depending on method)

Threshold gel concentration: Not higher than 0.25%

Plumb content: Not more than 5mg/kg

Total content of heavy metals: Not more than 10mg/kg

- **Stability and reactivity**

Stable product under ordinary conditions of use and storage. There's no possibility of decomposition processes of spontaneous polymerization.

- **Toxicological information**

Toxicity: Non Toxic

LD50 (Medium lethal dose): Not found.

ADI: Non. Limited. Registered in the additive list indicating Q.S. Daily ingestion allowed is established between 0 and 50 mg/kg body weight (substances without specific ADI) Dose used most frequently is established between 15 and 20 g/kg of product ready for consumption (general foods), alone or mixed.

Carcinogenic research: No adverse reports on file

- **Ecological information**

It is a natural extract. There are no adverse environmental reports in this sense. Possibly hazardous biodegradation of product is not likely.

- **Disposal considerations**

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved disposal facility.

- **Transport information**

Application of any special procedure is not necessary.

- **Regulatory information**

EC Nr. E406; C.A.S nr: 9002-18-0; EINECS nr: 232-658-1

FAO/WHO, European Pharmacopoeia 01/2002:0310

FDA (USA): Generally Recognized as safe (GRAS)

- **Other information : Purity Tests**

Loss of drying: Not more than 20% after drying at 105.c until the difference between two weighings is less than 1 mg (About 5 h). Unground agar should be cut into pieces from 2 to 5 mm² before drying.

Water absorption: Place 5g of sample in a 100ml graduated cylinder, fill to the mark with water, mix and allow to stand at 25.c for 24 h. Pour the contents of the cylinder through moistened glass wool, allowing the water to drain into a second 100ml graduated cylinder. Not more than 75ml of water should be obtained.

Total ash: Weigh 3g of sample to the nearest 0.1mg in a tared crucible. Ignite at a low temperature (About 550.c), not to exceed a very dull redness, until free from carbon, cool in a desiccator, and weigh. If a carbon-free ash is not obtained, wet the charred mass with hot water, collect the insoluble residue on an ashless filter paper, and ignite in the crucible the filter paper until the ash is white or nearly so. Add the filtrate, evaporate to dryness and heat to a dull redness. If a carbon-free ash is still not obtained, cool the crucible, add 15ml of ethanol, break up the ash with a glass rod, burn off the ethanol,

heat to a dull redness again, cool and weigh. Calculate the percentage of total ash from the dry weight of the sample.

Acid-Insoluble ash: Boil the ash obtained as directed under "Total ash" mentioned above, with 25ml of dilute hydrochloric acid TS for 5 min. Collect the insoluble matter on a tared Gooch crucible or ashless filter, wash with hot water, ignite cool and weigh. Calculate the percentage of acid-insoluble ash from the dry weight of sample.

Foreign insoluble matter: Boil 5g of sample with 500ml of water and 12ml of sulphuric acid under a reflux condenser for 2 h. Allow to cool and filter through a tared, fine sintered glass crucible. Wash flask and filter with 50ml of water, dry at 105.C to constant weight and weigh. Calculate as percentage.

Starch and dextrans: To a warm 40.C 0.5% solution of sample. Add 2 drops of iodine TS. Where the drops fall, a red-violet colour appears. After mixing, the solution should be golden brown, not blue or reddish.

Gelatin and other proteins: To a warm 40.C 0.5% solution of sample, add 1 volume of warm (40.C) picric acid TS. No turbidity should appear within 10 min.

Threshold gel concentration: Prepare serial dilutions of sample with known solids content (0.15%, 0.20% etc) and place in tubes, 150 mm long by 16mm internal diameter, stoppered at both ends. Cool for 1 h at 20.C. Allow cylinders of gel to slide from the tubes to a level surface. The lowest concentration of gel that resists gravity without rupture for 5-30 seconds is the threshold concentration of sample.

Compositional breakdown and countries of origin

Ingredients: Agar-Agar.

Dried hydrophilic colloid extracted from Gelidium Sesquipedale specie. Polygalactoside formed by 60% to 90% of D-Galactose molecules, and 10% to 40% of L-Galactose molecules. On about every tenth D-Galactopyranose unit, one of the groups – CH₂OH or CHOH- is esterificated with one molecule of sulphuric acid; from the ester obtained, the salt is formed substituting the remaining atom of hydrogen of the sulphuric acid by calcium, magnesium, potassium or sodium. SPAIN.

Nutritional breakdown

| | |
|-------------------|------------------|
| Fats (g) | 0,42 |
| Protein (g) | 1,06 |
| Fibres (g) | 0,63 |
| Carbohydrates (g) | 83,08 |
| H ₂ O | <u>14,81</u> |
| Energy | 340 Kcal/100 Grs |
| Sugars | NO |
| Cholesterol (mg) | NO |
| Starch | NO |

Carbohydrates, due to its own nature, are not assimilated nearly and produce a similar effect to fibres one.

Allergen content

| Contains | YES | NO |
|--|-----|----|
| Cereals containing Gluten(wheat, rye, barley,oats, kamut, or their hybridised | | |

| | |
|---|----------------------|
| Strains) and products thereof | X |
| Crustaceans and products thereof | x |
| Eggs and products thereof | X |
| Fish and products thereof | X |
| Peanuts and products thereof | X |
| Soya beans and products thereof | X |
| Milk and milk products thereof (including lactose) | X |
| Nuts (Almond, Hazelnut, Walnut, Cashew, Pecan nut, Brazil nut, Pistachio nut, Macademia nut, Queensland nut and chestnut) and products thereof | X |
| Celery, Celeriac and products thereof | X |
| Mustard and products thereof | X |
| Sesame seeds and products thereof | X |
| Sulphur dioxide and sulphites (E-220-E228) at concentrations of more than 10mg/kg or 10mg/litre expressed as SO ₂ | X |
| Animal products (other than those listed above) and products thereof | X |
| Yeast and products thereof | X |
| Lupins and products thereof | X |
| Molluscs and products thereof | X |
| | |
| Suitable for: | YES NO |
| Vegetarians | X |
| Vegans | X |
| Coeliacs | X |
| Kosher | X |
| Halal | X |

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Shelf life and storage conditions

Shelf Life:

We herewith CONFIRM that above mentioned material is an extract obtained from Gelidium Seaweeds of Sesquipedale Specie. Having a high stability, its consumption is recommended “Best before two years” of its manufacturing date preferently, although if it is stored correctly at dry conditions and in odour free areas, and the bag is maintained well closed, it could also be used even during a longer time.

Storage Conditions:

Product’s best storage: Keep the container tightly closed at dry conditions and in an odour free areas. Containers of this material may be hazardous when empty since they retain product residues (dust). Protect against physical damage. Keep away from heat or any sources of ignition.

Packaging details

Primary Packing

Type: Bag

Material: Polythene, Food Grade (Complying with current relevant Legislation)

Colour: White

Measurement: 950 X 500 mm

Weight: 70g

Number of Units: 1 per Box

Secondary Packaging

Type: Box

Material: Carton

Colour : Brown

Measurement: 430X400X240mm

Weight: 900g

Marks: Product name, type, Gross and Net weight, Lot nr, production date, box nr, purchase order nr, Caducity.

Tertiary Packing:

Type: Europallet, shrinkwrapped and strapped

Material: Wood

Measurement: 1200X800X150mm

Top board: Carton Layer

Number of units: 10 per layer, two layers per pallet. 400Kgs net

| GMO Status | | |
|---|------------|-----------|
| Contains | YES | NO |
| Soya Protein | | X |
| Soya Oil | | X |
| Emulsifiers & Derivates from Soya/Maize Oil | | X |
| Flavourings colours inc. Processing aids derived from soya/maize oil | | X |
| Native maize starch | | X |
| Modified native maize starch | | X |
| Waxy maize starch | | X |
| Dextrose derived from maize | | X |
| Maltodextrins derived from maize | | X |
| Glucose syrup derived from maize | | X |
| Other GM derived from any GM crop (For example, vegetable glycerine, invert | | |
| Sugar groups, HVP, Xantan gum, rape oil & deriviates) | | |
| Other ingredients manufactured using GM Technology (For example | | |
| Enzymes derived from GM organisms: cheese derivates manufactured using | | |
| chymosin derived from GM organisms) | | |

Our Product AGAR-AGAR, is produced from natural raw material, seaweeds of Gelidium Seaquipedale specie, that have been collected from the sea ground by natural ways too. It is a natural extract from seaweeds. Consequently, it is NON GENETICALLY MODIFIED, and it is not derived from any GMO organism either. **END of page**