INSOLUBLE WHEAT ARABINOXYLAN (Lot 140202)

P-WAXYI **08/19**
CAS: 9040-27-1

PROPERTIES:

Sugar composition:	Arabinose, 33.5%; Xylose, 62%; Glucose, 1.5 %; Mannose, 2.0% and Galactose, 1.0%
Sugar ration:	Arabinose : Xylose = 34 : 65
Purity:	> 90%
Starch content:	< 0.1%
Beta-glucan:	< 0.1%
Glucose (possibly as cellulose):	1.5%
Protein:	2.7%
Moisture:	2.0%
Ash:	1.0%
Physical Description:	Off-white, odourless powder

STORAGE CONDITIONS:

Store dry at room temperature in a well sealed container. Under these conditions, the product is stable for several years.

METHOD OF DISSOLUTION (for 1.0% w/v solution):

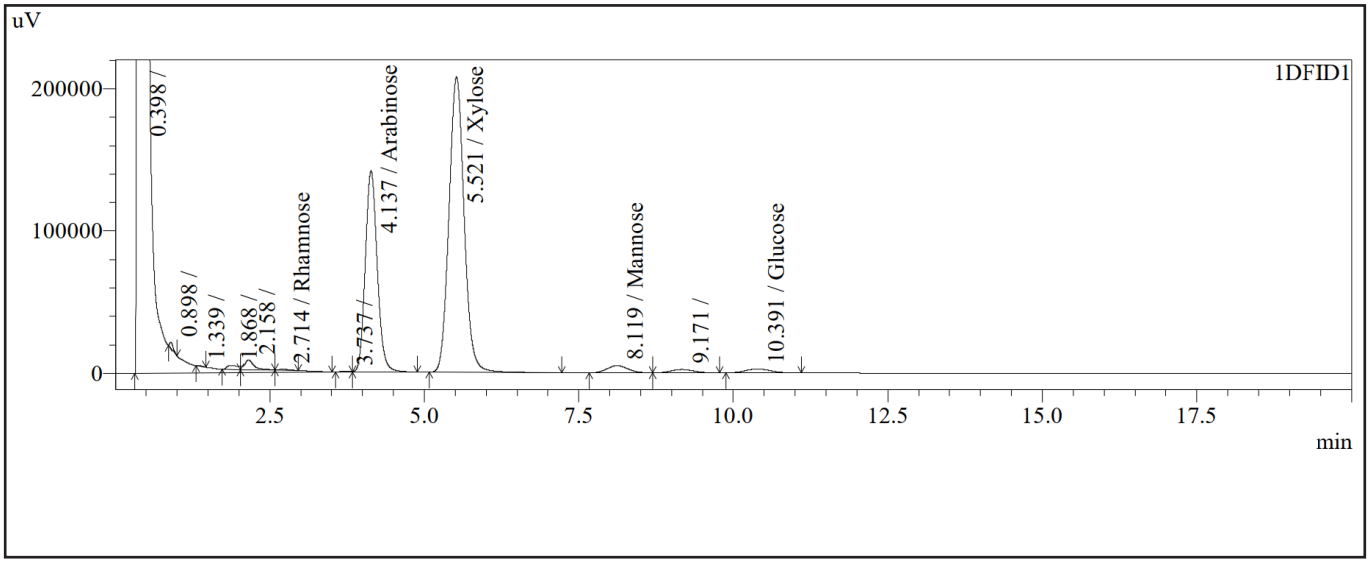
This arabinoxylan is the insoluble "pentosan" fraction from wheat flour. It has been purified to remove starch, β-glucan and protein. The product contains cellulose (measured as glucose by g.l.c. and possibly glucomannan and arabinogalactan. The material is insoluble in water, but can be solubilised as follows:

Add 1 gram of insoluble arabinoxylan to 90 mL of distilled water at room temperature and stir vigorously on a magnetic stirrer for 5 min to remove all lumps. Add 10 mL of 1 M sodium hydroxide solution and stir for 10 min at room temperature. Neutralise the solution by the addition of 5 M acetic acid, and adjust the pH to 4.5 with 1M HCl or 1 M sodium hydroxide. Adjust the volume to 100 mL with distilled water.

The solution is a light yellow/orange colour, and may be very slightly opalescant due to the presence of protein.

Arabinoxylan solutions can be stored at room temperature for several weeks in a well sealed storage bottle. Microbial contamination is prevented by adding two drops of toluene to the storage bottle.

GLC of the alditol acetates of insoluble wheat arabinoxylan (Lot 140202) hydrolysed with sulphuric acid.



GLC

A typical polysaccharide sample (~ 10 mg) was hydrolysed using 2N TFA at 120°C for 60 min. Subsequent sodium borohydride reduction was performed in 1N NH_4OH for 90 minutes at 40°C. The corresponding alditol acetates were prepared using acetic anhydride and 1-methyl imidazole, extracted into DCM and analysed by GC. Chromatography was performed on a Shimadzu GC-14B with CHROMATOPACK C-R8A using a Packed glass column (6 ft x 5 mm OD, 3 mm ID) with 3% Silar 10C on W-HP (80-100 mesh). The carrier gas was nitrogen at 130 KPa. Injector temperature; 250°C; Column temperature; 230°C. Detection by FID with 60KPa H_2 pressure and 50 KPa air pressure.