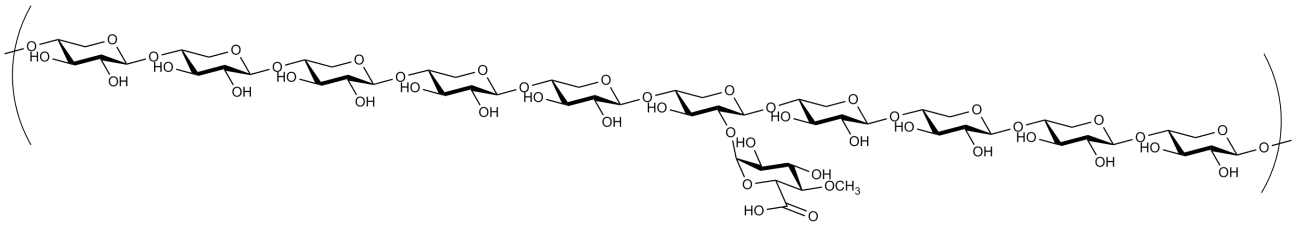
# XYLAN (Beechwood) (Lot 141202)

**P-XYLNBE** **11/15**
**CAS: 9014-63-5**

## STRUCTURE



Schematic representation of xylan (4-*O*-methyl glucuronoxylan)

## PROPERTIES

**Sugar Composition:** Xylose 81.3%, glucuronic acid 13.0%, other sugars 5.7%
**Protein:** 0.2%
**Ash:** 4.7%
**Moisture:** 4.1%
**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.

## APPLICATIONS

Highly purified xylan from beechwood suitable as a replacement for birchwood xylan as a substrate for β-xylanase in DNSA reducing sugar assays.

## COMPARISON OF PROPERTIES:

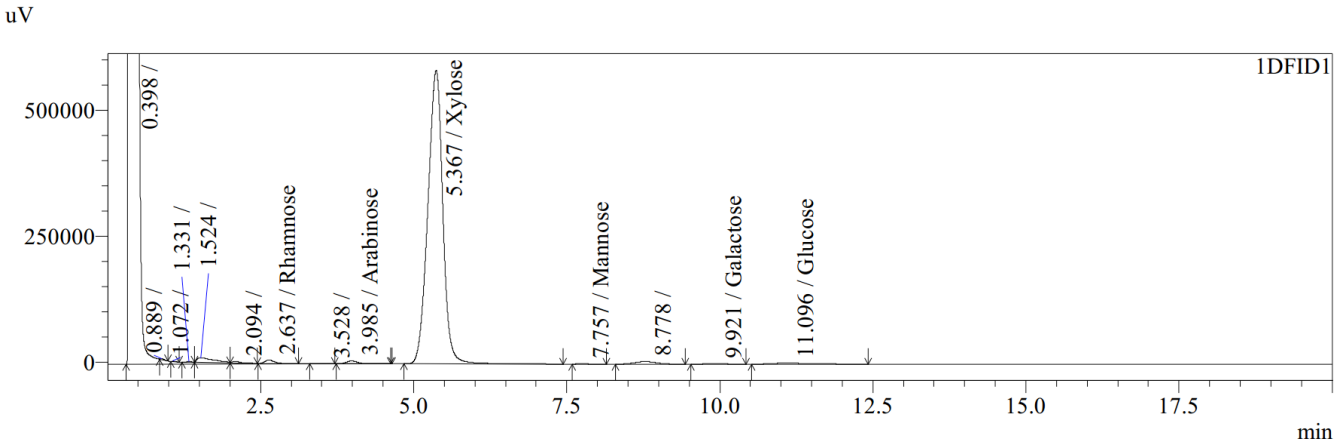
| Properties | Xylose, % | Glucuronic acid, % | Other sugars, % | Protein, % | Ash, % | Moisture, % |
|---|---|---|---|---|---|---|
| Xylan (Birchwood) | 85.6 | 8.7 | 5.7 | 0.1 | 7.6 | 5.1 |
| Xylan (Beechwood) lot 141202 | 81.3 | 13.0 | 5.7 | 0.2 | 4.7 | 4.1 |

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

Accurately weigh 1.0 g of xylan into a 120 mL dry pyrex beaker. Add 4 mL of 95% ethanol to wet the sample. Add a magnetic stirrer bar followed by 90 mL of distilled water while stirring the slurry on a hot-plate magnetic stirrer. Adjust the heat setting to 120°C and stir vigorously. Cover the beaker loosely with aluminium foil and continue stirring vigorously. Turn the heat off when the solution begins to boil, but continue stirring the solution until the xylan completely dissolves (approx. 10 min). Adjust the volume of the solution to 100 mL (this solution may be very slightly opalescent due to the presence of trace amounts of protein).

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

**Gas liquid chromatography of the alditol acetates derived from hydrolysis and derivatisation of Xylan (beechwood) lot 141202.**




## 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-2014 with LabSolutions LC/GC 5.42 Software 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 225 KPa. Injector temperature; 250°C; Column temperature; 230°C. Detection by FID with 100 KPa $H_2$ pressure and 50 KPa air pressure.