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**JASCO CERTIFIED INFRARED TRANSMISSION  
WAVENUMBER STANDARD**

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**N°J521/2023**

The infrared transmission wavenumber standard certified values are intended for use in calibrating the wavenumber scale of spectrophotometers in the infrared (IR) spectral region from 400 cm<sup>-1</sup> to 4000 cm<sup>-1</sup>).

This standard unit consists of a matte finish polystyrene film with a 25 mm diameter exposed area, centered 38 mm from the bottom of a cardboard holder, which is 5 cm × 11 cm × 0.2 cm in size.

Polystyrene film standard is certified on a Jasco FT/IR-4X Series Spectrometer – serial number A018362111 which has been calibrated with NIST certified polystyrene film (SRM-1921b), which is the NIST primary standard.

The instrument room temperature was maintained at 23 °C ± 1 °C and the humidity ranged from 30 % to 50 % during the measurements.

**Standard Identification:**

TAG: **IR-04**  
Description: **Thermo Mattson**  
Serial Number: **269-124000**

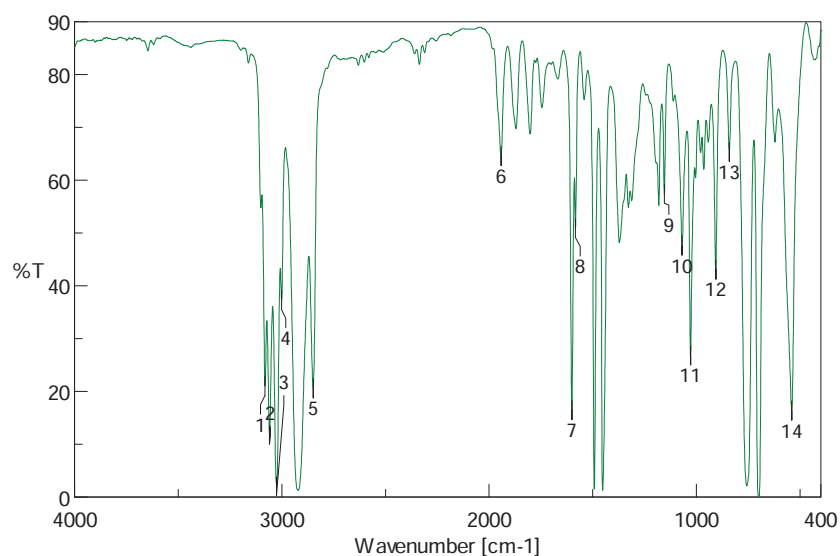
**Parameters used in this measurement:**

Light source	Standard
Detector	TGS
Accumulation	16
Resolution	4 cm <sup>-1</sup>
Zero filling	On
Apodization	Cosine
Gain	Auto (1)
Aperture	Auto (7 mm)
Scan speed	Auto (2 mm/sec)
Filter	Auto (12800 Hz)

**Results:**

Band Number	Primary Standard Wavenumber position[cm <sup>-1</sup> ]	Secondary Standard Wavenumber position[cm <sup>-1</sup> ]	Difference [cm <sup>-1</sup> ]	Acceptance criterion [± 0.5 cm <sup>-1</sup> ]
1	3082.26	3081.79	0.47	<b>Approved</b>
2	3060.16	3059.71	0.45	<b>Approved</b>
3	3025.99	3025.76	0.23	<b>Approved</b>
4	3001.2	3001.66	0.46	<b>Approved</b>
5	2849.48	2849.31	0.17	<b>Approved</b>
6	1942.97	1942.93	0.04	<b>Approved</b>
7	1601.29	1600.83	0.46	<b>Approved</b>
8	1582.98	1583.27	0.29	<b>Approved</b>
9	1154.5	1154.19	0.31	<b>Approved</b>
10	1069.22	1069.33	0.11	<b>Approved</b>
11	1028.27	1027.87	0.40	<b>Approved</b>
12	906.63	906.38	0.25	<b>Approved</b>
13	841.79	841.78	0.01	<b>Approved</b>
14	539.41	539.87	0.46	<b>Approved</b>

**Spectrum:**



The expiration data is, as noted below, is 5 years from the date of validation.

Calibrated by: \_\_\_\_\_ **Roberto Cruz**

Date Certified: \_\_\_\_\_ **November 23, 2023**

Expiration Date: \_\_\_\_\_ **November 23, 2028**

**Roberto  
Cruz**

Digitally signed by Roberto Cruz  
DN: cn=Roberto Cruz, o=Jasco,  
ou=Service,  
email=rcruz@jasco.com.br, c=US  
Date: 2023.11.23 13:57:43 -03'00'