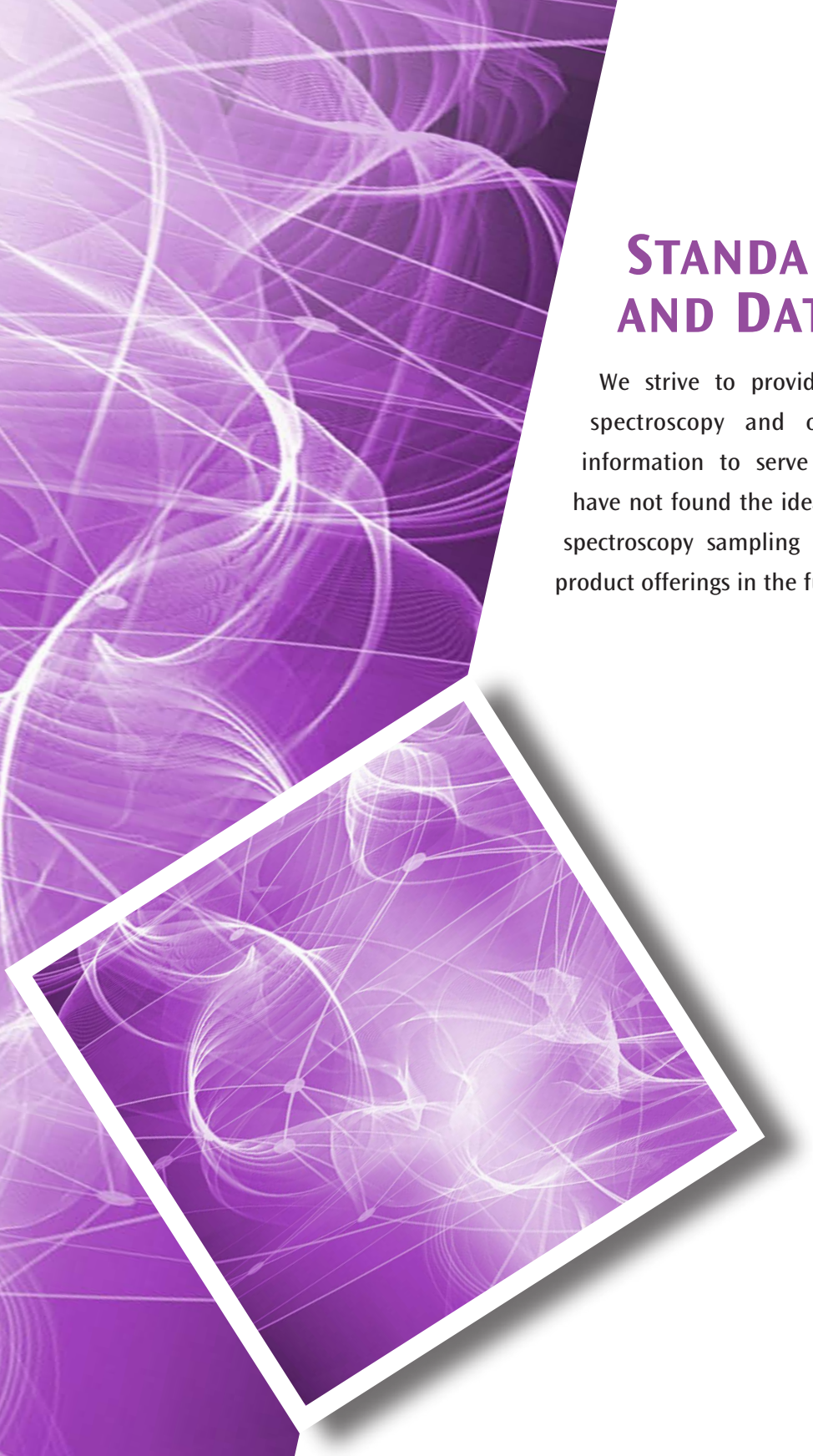
PIKE TECHNOLOGIES

Standards, Software and Databases

We strive to provide you with useful sampling tools for spectroscopy and offer these additional products and information to serve your laboratory requirements. If you have not found the ideal sampling tool, please contact us. Your spectroscopy sampling requirements may become one of our product offerings in the future.



Reference Standards
For calibrating your spectrometer

PIKECalc™
For FTIR sampling computations

Spectral Databases
ATR and transmission versions for your FTIR

PIKE Technologies, Inc., 6125 Cottonwood Drive, Madison, WI 53719
(608) 274-2721 · www.piketech.com · sales@piketech.com

Reference Standards –
For Calibrating FTIR Spectrometers

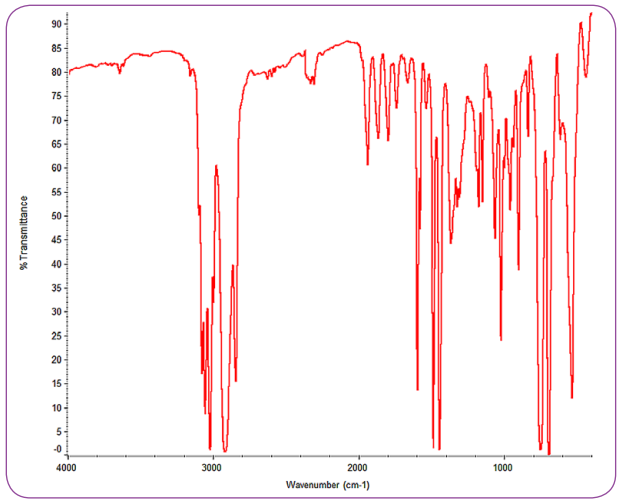
Features

- **Mid-IR and NIR spectral regions products**
- **Transmission, reflection and ATR versions**
- **Traceable versions available**

FTIR spectrometers are highly accurate and reliable measurement tools. Their internal referencing laser (Connes advantage) is a great leap forward in wavenumber accuracy and repeatability. Still, it is often required by regulatory agencies and operating procedures to calibrate the spectrometer. PIKE Technologies offers several new products to assist in this task

PIKE Technologies offers several versions of **polystyrene reference materials** for FTIR spectrometer calibration. The 1.5 mil and 55 micron thick polystyrene are generally specified for calibrating wavenumber accuracy. A NIST traceable polystyrene version of these products is available which includes the reference material, calibration result for the material and its traceability documentation.

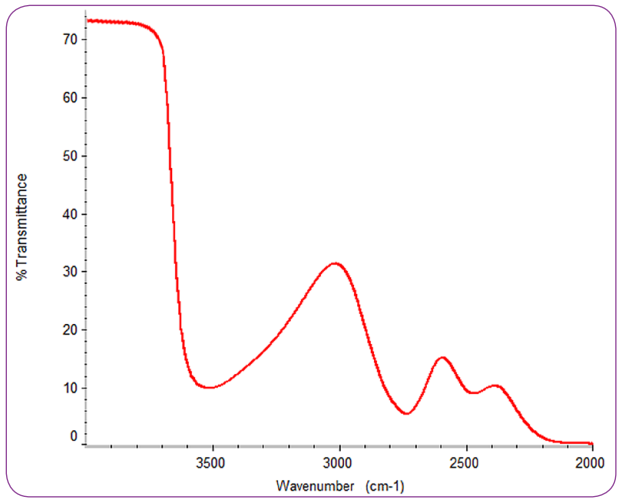
Polystyrene Reference Standards – for calibrating FTIR wavenumber accuracy



Polystyrene Reference Standard spectrum.

To evaluate FTIR instrument photometric linearity, PIKE offers the **NG11 Reference Standard** traceable to National Research Council of Canada. The traceability documentation included shows transmission values at seven band assignments. The range covered is 4000 to 2000 cm^{-1}. The NG11 element comes mounted in a standard 2 x 3 inch slide.

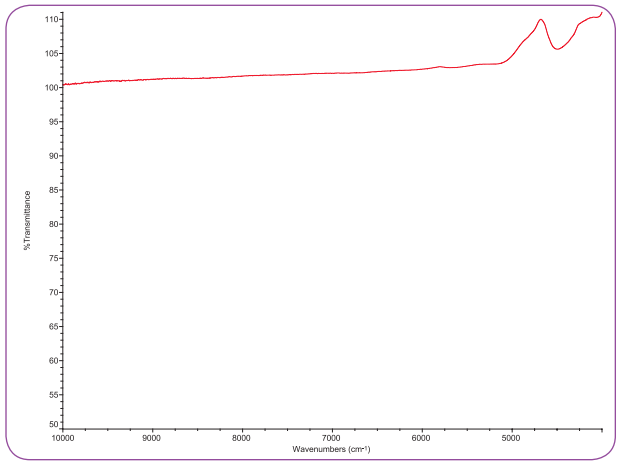
NG11 Linearity Reference Standard



NG11 Reference Standard spectrum.

For diffuse reflectance measurements in the NIR and UV-Visible spectral region, it is often desirable to measure against the highest possible reflectance material. **NIR and UV-Vis Diffuse Reflectance Standards** are available in highly reflective diffuse gold and PTFE. Each standard is certified to a National Research Council of Canada traceable plaque standard.

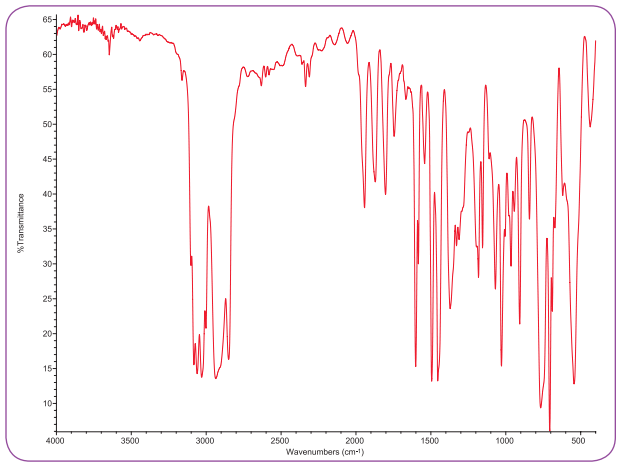
Diffuse Gold Reference Standard



Measured reflectivity of Diffuse Gold Reference Standard.

Diffuse reflectance sampling in the mid-infrared region is used to measure the reflectance of powders, films, painted panels and other samples. Exhibiting sharp peaks throughout the mid-IR spectral region, the **Mid-IR Diffuse Reflectance Wavelength Standard** is used to verify and calibrate for wavelength accuracy or diffuse reflectance measurements. This standard is NIST traceable to NIST 1921b and an analysis certificate is included.

Mid-IR Diffuse Reflectance Wavelength Standard

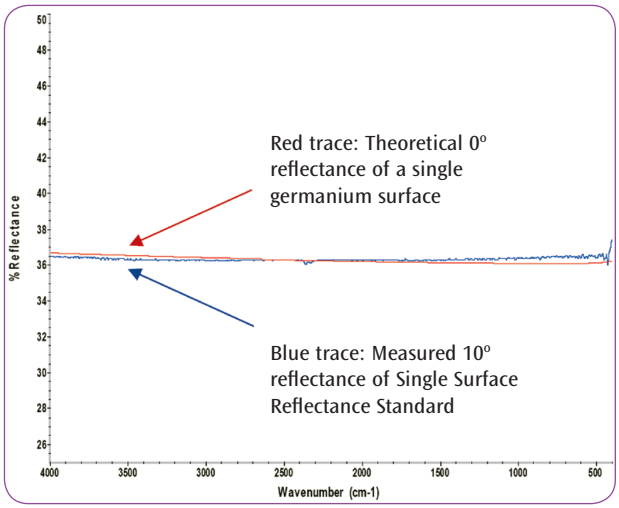


Mid-IR Diffuse Reflectance Standard spectrum.

The **Specular Reflectance Standard** is a unique material for calibration of your reflectance measurement system. The standard is a specially treated germanium element which only allows reflection from its front surface – thereby providing a reflection value which can be calculated relative to Fresnel equations.

The Specular Reflectance Standard includes documentation to trace the specular reflectance to published refractive index data. It is compatible with the following PIKE Technologies specular reflectance accessories: VeeMAX III, 10Spec, 30Spec, 45Spec and 80Spec.

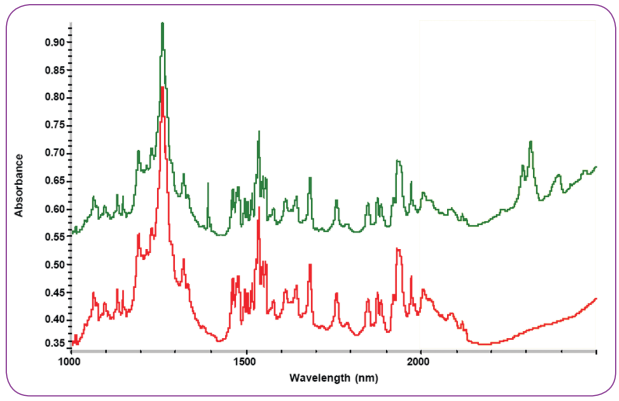
Specular Reflectance Standard – for calibrating reflectance measurement system



Comparison of measured and calculated reflectance for the Specular Reflectance Standard using the PIKE 10Spec accessory.

In the near infrared (NIR) spectral region, PIKE Technologies offers its **NIR Wavelength Standard** for calibrating a NIR spectrometer. The NIR Wavelength Standard meets USP wavelength requirements, provides calibration beyond 2.0 µm and is NIST traceable. This standard is compatible with NIR analysis in the diffuse reflectance sampling mode. The NIR Wavelength Standard includes analysis certificate and traceability documentation.

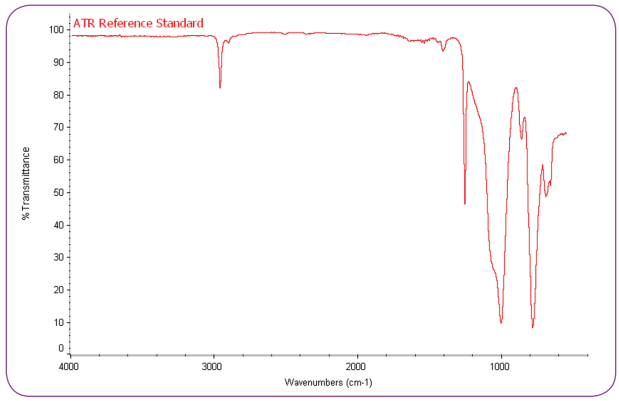
NIR Wavelength Standard



NIR Wavelength Standard spectral data. PIKE NIR Wavelength Standard (upper green spectrum), NIR standard from another supplier (lower red spectrum).

ATR spectra are somewhat different than those produced by transmission sampling techniques – both in relative intensity of the absorbance bands and also the position of the bands. To assist with calibrating your ATR/FTIR system, PIKE Technologies offers an **ATR Reference Standard**. The ATR Reference Standard is available as a standard material and also in a version which includes a recommended validation procedure for your ATR/FTIR system.

ATR Reference Standard



ATR Reference Standard spectrum.

Ordering Information

Polystyrene Reference Standards

Part Number	Description
162-5450	NIST Traceable Polystyrene Reference Standard, 1.5 mil
162-5420	Polystyrene Reference Standard, 1.5 mil (38 micron)
162-5440	Polystyrene Reference Standard, 2.2 mil (55 micron)

Note: Polystyrene reference standards are mounted in a 2" x 3" card and are compatible with all FTIR spectrometers.

NG11 Linearity Reference Standard

Part Number	Description
162-5490	NG11 Transmission Standard

Specular Reflectance Standard

Part Number	Description
162-5460	Specular Reflectance Standard

Note: Compatible with 10Spec, 30Spec, 45Spec, 80Spec and VeeMAX III accessories.

NIR and UV-Vis Diffuse Reflectance Standards

Part Number	Description
162-5480	Diffuse PTFE Reference, 0.9" optical diameter
162-5481	Diffuse Gold Reference, 0.9" optical diameter
162-5482	Diffuse Gold Reference, 1.7" optical diameter

Mid-IR Diffuse Reflectance Standards

Part Number	Description
162-5485	Mid-IR Diffuse Reflectance Wavelength Standard, 1.75" optical diameter
162-5486	Mid-IR Diffuse Reflectance Wavelength Recertification

ATR Reference Standard

Part Number	Description
162-5470	ATR Reference Standard
162-5475	ATR Reference Standard with Recommended Validation Procedure and Validation Certificate
162-5476	ATR Reference Standard Recertification

Note: Compatible with MIRacle, GladiATR and VeeMAX III with ATR accessories.

NIR Wavelength Standard

Part Number	Description
048-3070	Traceable NIR Reference Standard, 0.9" optical diameter
048-3071	Traceable NIR Reference Standard Recertification

Note: Includes traceability measurement documentation.

PIKECalc Software –
For FTIR Sampling Computations

Features

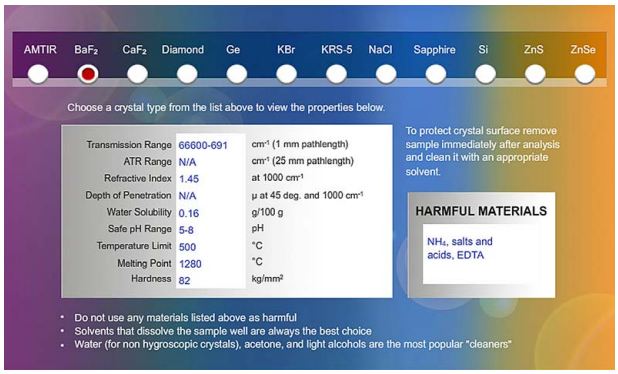
- **Convert from wavelength (micron and nanometer) to wavenumber**
- **Calculate depth of penetration, critical angle, effective pathlength, effective angle of incidence and number of reflections for ATR**
- **Calculate cell pathlength, thickness of free-standing film and thickness of coating**
- **FREE access online at www.piketech.com**

PIKECalc software is easy to use – just select the type of computation, enter values from your spectral data and click on the calculate button. An instant calculation is performed.

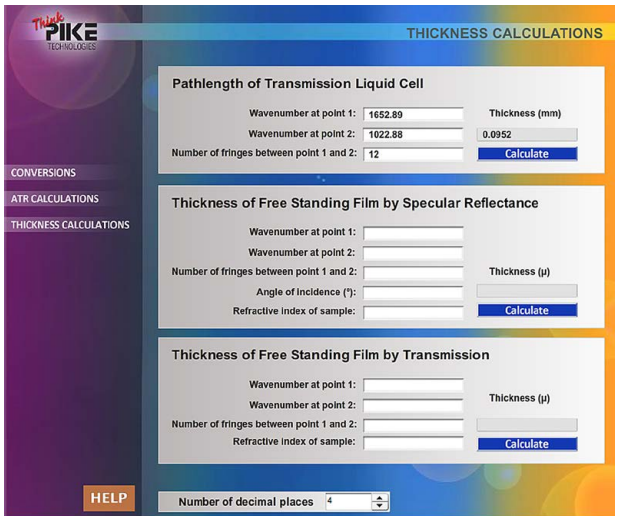
PIKECalc eliminates the need to search through literature references to find the correct conversions and formulae and gives you immediate results. All formulae and equations are documented in the software, if you wish to reference our mathematics. Help and how to use PIKECalc is included within the software.

Please ask us about other FTIR spectroscopy calculations you may need.

To activate our free on-line interactive Crystal Properties program and FTIR Calculator, select a gold button on the homepage of our website: **www.piketech.com.** The FTIR Calculator allows for wavelength to wavenumber conversion, pathlength and film thickness determination, and ATR calculations. Refer to our Crystal Properties program to choose the best crystal to use for your application.



Crystal Properties program available online.



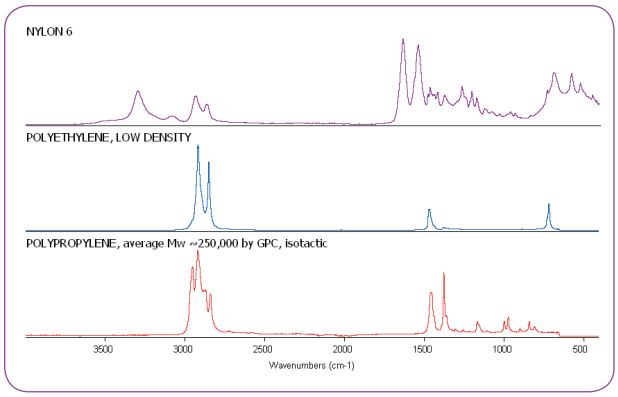
Conversions function of the online FTIR Calculator.

Ordering Information

Part Number	Description
007-0300	PIKECalc Software on CD

Notes: PIKECalc is loaded on a CD disk for upload to your PC and operates with current versions of Microsoft operating systems.

ATR Spectral Databases –
Optimize Search Results for ATR Spectral Data



Features

- **Select from databases with over 40,000 ATR spectra**
- **All spectra collected using FTIR spectrometers and a single reflection ATR**
- **Complete collections and applications databases available**
- **Compatible with most FTIR software**

Spectral search is greatly improved when using databases collected using the same sampling mode – especially when the sampling mode is ATR. PIKE Technologies offers a large selection of ATR spectral databases.

The Aldrich ATR Spectral Database contains 18,513 spectra produced by the Aldrich Chemical Company. The collection includes organic and inorganic compounds and also includes polymers and industrial chemicals. Spectral range is 4000–650 cm^{-1}.

The IChem ATR Spectral Database contains 13,557 spectra produced by Fine Chemical manufacturers in Japan. This collection includes organic and inorganic compounds, basic polymers and industrial chemicals. Spectral range is 4000–650 cm^{-1}.

The Aldrich-IChem ATR Spectral Database Package includes 40,810 spectra, a combination of all ATR spectra from both databases – with no duplicate entries.

A wide variety of applications spectral database packages are formed from the Aldrich ATR and the IChem ATR databases.

These spectral databases are compatible with ABB Horizon MB™, ACD/Labs, Bruker Opus, Jasco Spectra Manager™ Suite, Lumex SpectraLUM/Pro®, PerkinElmer Spectrum 10™, WinFirst™, Shimadzu IRSolution and HyperIR, LabControl SPECTACLE, Thermo Scientific OMNIC™, Varian Resolutions Pro™, GRAMS and Spectral ID software packages and more. A USB port is required on your PC where a dongle is installed for copy protection.

Ordering Information

ATR Spectral Databases

Part Number	Description
008-1000	Aldrich ATR Spectral Database (18,513 spectra)
008-2000	IChem ATR Spectral Database (13,557 spectra)
008-3000	Aldrich-IChem ATR Spectral Database Package (40,810 spectra)

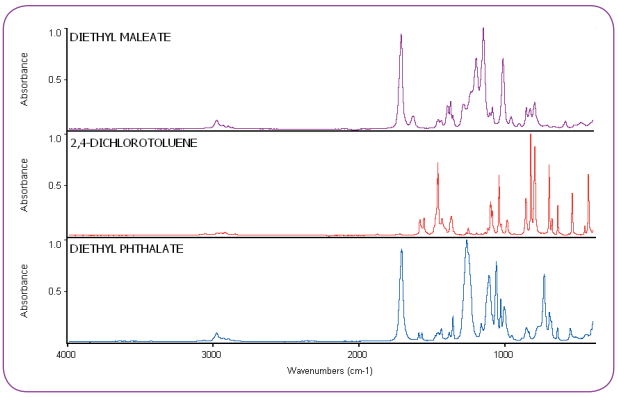
Notes: The spectral databases include a USB-based device – dongle for copy protection. Please designate either 2 cm^{-1} or 4 cm^{-1} spectral data format.

ATR Application Specific Spectral Databases

Part Number	Description
008-3002	ATR Applications – Polymers and Polymer Additives (7,970 spectra)
008-3003	ATR Applications – Food Additives and Food Packaging (4,239 spectra)
008-3004	ATR Applications – Solvents (1,313 spectra)
008-3005	ATR Applications – Organometallics and Inorganics (2,125 spectra)
008-3006	ATR Applications – Biochemicals (7,529 spectra)
008-3007	ATR Applications – Aldehydes and Ketones (5,162 spectra)
008-3008	ATR Applications – Alcohols and Phenols (3,700 spectra)
008-3009	ATR Applications – Esters and Lactones (8,326 spectra)
008-3010	ATR Applications – Hydrocarbons (1,141 spectra)
008-3011	ATR Applications – Flavors, Fragrances and Cosmetic Ingredients (4,060 spectra)
008-3012	ATR Applications – Pesticides (3,211 spectra)
008-3013	ATR Applications – Semiconductor Chemicals (1,379 spectra)
008-3014	ATR Applications – Forensic (3,770 spectra)
008-3015	ATR Applications – Dyes, Pigments and Stains (3,561 spectra)
008-3016	ATR Applications – Sulfur and Phosphorus Compounds (5,655 spectra)
008-3017	ATR Applications – Hazardous Chemicals (6,698 spectra)
008-3018	ATR Applications – Hazardous and Toxic Chemicals (4,022 spectra)
008-3020	ATR Applications – Pharmaceuticals, Drugs and Antibiotics (4,796 spectra)
008-3021	ATR Applications – High Production Volume (HPV) Chemicals (2,032 spectra)
008-3025	ATR Applications – Coatings (2,433 spectra)
008-3026	ATR Applications – Paints (3,426 spectra)

Notes: The spectral databases include a USB-based device – dongle for copy protection. Please designate either 2 cm^{-1} or 4 cm^{-1} spectral data format. Specify your FTIR software for correct format. Due to new additions or revisions to databases, spectral quantities may fluctuate. Please call for exact specifications at time of order.

Transmission Spectral Databases –
High-Quality Spectral Data for Optimized Search Results



Features

- **Select from databases with over 50,000 transmission spectra**
- **All spectra collected using FTIR spectrometers and transmission sampling mode**
- **Complete collections and applications databases available**
- **Compatible with most FTIR software**

PIKE Technologies offers a large collection of high-quality, spectral databases collected in the transmission sampling mode.

The **SDBS Transmission** Spectral Databases include over 50,000 spectra produced by Fine Chemical manufacturers in Japan. All spectra were collected at the Japanese National Laboratories under highly controlled conditions with secondary verification of the materials by NMR and MS. Data is measured using several sample preparation methods. Spectral range is 4000–400 cm^{-1}.

The **SDBS Transmission by KBr Pellet** Spectral Database contains 22,995 spectra. This collection includes organic and inorganic compounds, basic polymers and industrial chemicals.

The **SDBS Transmission by Liquid Film** Spectral Database contains 7,018 spectra. This collection includes organic compounds and industrial chemicals.

The **SDBS Transmission by Nujol Mull** Spectral Database contains 21,127 spectra. This collection includes organic and inorganic compounds and industrial chemicals.

A wide variety of applications spectral database packages are formed from the KBr Pellet and Liquid Film Spectral Databases.

These spectral databases are compatible with ABB Horizon MB™, ACD/Labs, Bruker Opus, Jasco Spectra Manager™ Suite, Lumex SpectraLUM/Pro®, PerkinElmer Spectrum 10™, WinFirst™, Shimadzu IRSolution and HyperIR, LabControl SPECTACLE, Thermo Scientific OMNIC™, Varian Resolutions Pro™, GRAMS and Spectral ID software packages and more. A USB port is required on your PC where a dongle is installed for copy protection.

Ordering Information

Transmission Spectral Databases

Part Number	Description
008-4001	SDBS Transmission by KBr Pellet Spectral Database (22,995 spectra)
008-4004	SDBS Transmission by Liquid Film Spectral Database (7,018 spectra)
008-4005	SDBS Transmission by Nujol Mull Spectral Database *(21,127 spectra)*

Notes: The spectral databases include a USB based device – dongle for copy protection. Please designate either 2 cm^{-1} or 4 cm^{-1} spectral data format.

Application Based Spectral Databases

Part Number	Description
008-5002	Transmission Applications – Polymers and Polymer Additives (1,273 spectra)
008-5003	Transmission Applications – Food Additives and Food Packaging (1,684 spectra)
008-5004	Transmission Applications – Solvents (668 spectra)
008-5005	Transmission Applications – Organometallics and Inorganics (1,445 spectra)
008-5006	Transmission Applications – Biochemicals (4,590 spectra)
008-5007	Transmission Applications – Aldehydes and Ketones (4,226 spectra)
008-5008	Transmission Applications – Alcohols and Phenols (2,744 spectra)
008-5009	Transmission Applications – Esters and Lactones (4,335 spectra)
008-5010	Transmission Applications – Hydrocarbons (1,417 spectra)
008-5011	Transmission Applications – Flavors, Fragrances and Cosmetic Ingredients (1,912 spectra)
008-5012	Transmission Applications – Pesticides (958 spectra)
008-5013	Transmission Applications – Semiconductor Chemicals (664 spectra)
008-5014	Transmission Applications – Forensic (1,555 spectra)
008-5015	Transmission Applications – Dyes, Pigments and Stains (1,473 spectra)
008-5016	Transmission Applications – Sulfur and Phosphorus Compounds (5,025 spectra)
008-5017	Transmission Applications – Hazardous Chemicals (2,664 spectra)
008-5018	Transmission Applications – Toxic Chemicals (6,604 spectra)
008-5020	Transmission Applications – Pharmaceuticals, Drugs and Antibiotics (2,806 spectra)
008-5021	Transmission Applications – High Production Volume (HPV) Chemicals (1,123 spectra)
008-70051	Transmission Applications – Kidney Stones (1,668 spectra)

Notes: The spectral databases include a USB-based device – dongle for copy protection. Please designate either 2 cm^{-1} or 4 cm^{-1} spectral data format. Specify your FTIR software for correct format. Due to new additions or revisions to databases, spectral quantities may fluctuate. Please call for exact specifications at time of order.

Ordering Terms, Contact Information and Guarantee

Part Numbers and Price

The PIKE price list includes accessories that may be used with a variety of makes and models of spectrometers. Please specify the part number and description when ordering, including your instrument type and model number. Click here for a list of spectrometer and spectrophotometer instrument codes. When placing an order, substitute these codes for the final two digits (XX) in the accessory part number.

PIKE Technologies is continually extending the accessory product range. If you are unable to find a required item, please contact us to discuss your needs. We will be glad to assist.

Payment Terms

Purchase Order Number, cash in advance, MasterCard and Visa are acceptable. Payment is net 30 days, and shipments are FOB Madison, WI USA. Freight charges are prepaid and added to your invoice. If you wish to pay freight charges, please specify this on your order. Prepayment is required for international customers.

International Handling Fee

For orders placed from outside the United States or Canada, a handling fee of $40 will apply per order to cover the costs associated with the additional documentation and bank charges required for international shipments.

Ways to Order

Many products are available for purchase directly through our website. These items are marked on our website with a red shopping cart icon.

Please include the following information when placing an order: your name, phone number, product part number, quantity, ship to address, bill to address, purchase order number and spectrometer model on which the accessory will be used.

Orders may be placed via mail, phone, fax, e-mail or on our website. We accept Visa and Mastercard via phone and direct online purchases. For security purposes, do not send credit card information via e-mail. An electronic order form is available on our website (for P.O. Numbers only – do not use this form for credit card orders). There is no minimum order requirement. Please use the following addresses and phone/fax numbers when placing your orders:

PIKE Technologies, Inc.
6125 Cottonwood Drive
Madison, WI 53719
(608) 274-2721 (TEL)
(608) 274-0103 (FAX)
orders@piketech.com (E-MAIL)
www.piketech.com

Delivery

The delivery/shipment date is confirmed upon receipt of an order. Special requirements and custom accessories are subject to different lead times. Please contact us for price quotes and delivery information on these products.

Guarantee

All PIKE products are guaranteed to be free from defects in material and workmanship for a period of 12 months from the date of shipment. Should you be dissatisfied, or have any queries, please contact us immediately and we will promptly repair or replace the product at no charge.

Product Returns

Please contact PIKE to receive your Return Material Authorization (RMA) number if you wish to return any of our products. A restocking fee may apply. Customers are responsible for shipping charges for all returned products. For products under warranty, back-to-customer shipping charges will be covered by PIKE. Please do not return any products without obtaining the RMA number first.

Technical Assistance

PIKE Technologies offers comprehensive technical assistance. Please contact us via mail, phone, fax or e-mail with your questions.

International Distribution

PIKE Products are available worldwide. Call or send us an e-mail and we will provide you with an address of the sales office closest to your location. All exports are handled in accordance with the US Export Administration Regulations.

PIKE on the Web

Visit our web site to find out more information about new products, up-to-date PIKE news, pricing, and to see the latest copy of the PIKE Reflections Newsletter! www.piketech.com • info@piketech.com

Customer satisfaction is very important to all of us here at PIKE Technologies, Inc. We have hopefully made the ordering process very fast and easy for you. If you have any questions or concerns about our products or services, please don't hesitate to contact us. We will be happy to make adjustments to fit your needs.

Products and prices are subject to change without notification.

FTIR and UV-Vis Instrument Codes

When ordering a PIKE accessory, replace the XX or XXX portion of the product's part number with your spectrometer's instrument code below. For assistance, please contact a PIKE customer service representative at (608) 274-2721 or sales@piketech.com.

FTIR Instrument Codes (XX)

ABB Bomem	
FTLA2000-100 (Arid Zone)	80
Michelson 100, MB Series	81
MB 3000	82
Agilent	
Excalibur™, Scimitar™, FTS, 600-IR Series	10
Excalibur™, Scimitar™, 600-IR Series with recognition	13
Analect (See Hamilton Sundstrand)	
Bio-Rad (See Agilent)	
Bruker Optics	
IFS™, Vector™, Equinox™ Series.	50
Tensor™, Vertex™ with recognition (Quick-Lock)	51
Buck Scientific	
M500	65
Digilab (See Agilent)	
Hamilton Sundstrand AIT	
Diamond 20	60
Horiba	
7000 Series	35
Interspectrum	
Interspec 200-X	90
Jasco	
300/600 Series	56
400	57
4000/6000 Series	58
JEOL	
Winspec™ Series	46
Lambda Scientific	
Lambda FTIR 7600	66
Lambda FTIR 8600	64
Lumex	
INFRALUM FT-02, FT-08	67
Mattson (See Thermo Electron)	
Midac	
M Series	30
Nicolet (See Thermo Electron)	
Oriel	95
Optical Table	99
PerkinElmer	
1700 Series	70
Spectrum™ GX, 2000	71
Spectrum BX / RX, 1600, Paragon 1000	73
Frontier, Spectrum One, 65, 100, 400 with recognition	74
Spectrum Two with recognition	75
Shimadzu	
8300, 8400 Series, IRPrestige™-21, IRAffinity-1s	15
IRPrestige™-21, IRAffinity-1s with recognition (QuickStart)	16
IRTracer™-100	18
IRTracer™-100 with recognition	19
Thermo Electron / Nicolet / Mattson	
Infinity, Galaxy, RS Series	20
Genesis™, Satellite, IR 300	21
Impact™ 400, Magna, Protege™, 500 / 700 Series	40
Avatar™, Nexus™, Nicolet™, iS™10, iS™50	40
Model 205/210	41
Nicolet iS™5	42
Avatar, Nexus, Nicolet Series with recognition (Smart)	47
Varian (see Agilent)	

UV-Vis Instrument Codes (XXX)

Agilent/Varian	
Cary 50	100
Cary 60	111
Cary 100, 300	110
Cary 4000, 5000, 6000i	120
Jasco	
600 Series	600
Optical Table	999
PerkinElmer	
Lambda 650, 750, 850, 950 and 1050	700
Lambda 25, 35, 45	730
Shimadzu	
1600 and 1700	200
1800 Series	210
2600	240
3600	220
Thermo Fisher Scientific	
Evolution 300/600	400
Evolution 200	410

Helpful Links

Order Form

Quote Request Form

Application Notes

Visit our Website

Contact Us

PIKE TECHNOLOGIES

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(608) 274-2721 (Tel), (608 274-0103 (Fax)

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