INTERNATIONAL CENTRE FOR DIFFRACTION DATA

Powder Diffraction File™ Databases

PDF-5+

The Powder Diffraction Standard

PDF-5+ Server Edition

Extend the Power of Your Database

PDF-4/Axiom

Quality + Value

PDF-4/Minerals

Comprehensive Mineral Collection

PDF-2

Phase Identification + Value

JADE® Analysis Software

JADE Pro

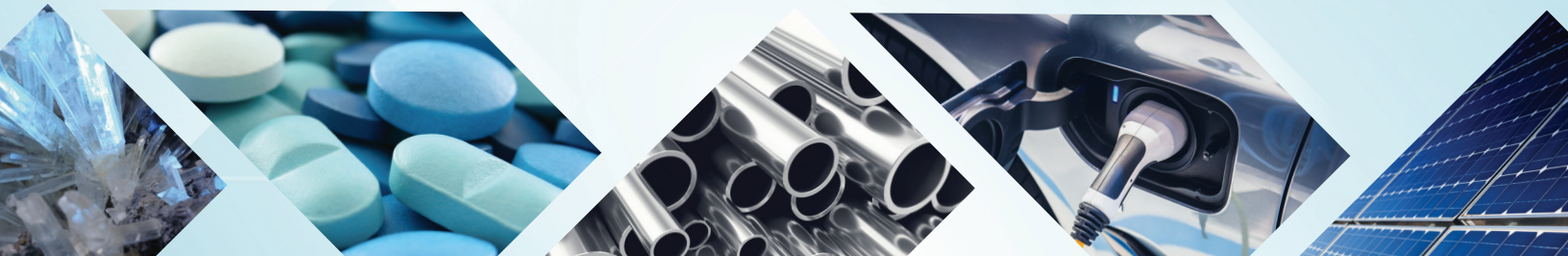
All-Inclusive

ICDD®
International Centre for Diffraction Data

ISO 9001:2015 QUALITY MANAGEMENT SYSTEM CERTIFIED BY DEKRA CERT. NO. 1104409.01

Quality Management System Certified to ISO 9001:2015 by DEKRA

MDI Materials Data™



JADE Standard

JADE Standard provides a more limited set of tools than JADE Pro, but without the annual updates and renewal costs. Available in three levels -

Level 1: Base
Level 2: A - Phase ID (S/M)
B - WPF + Rietveld
Level 3: Add both Phase ID (S/M) and WPF + Rietveld

Included with all levels of JADE Standard -
Simulation and Visualization - Simulate powder patterns to create your own custom database. Visualize a structure in 3D with motion. Visual cues throughout to better help you and your team understand the materials you are analyzing.

KEY POINTS - ALL LEVELS

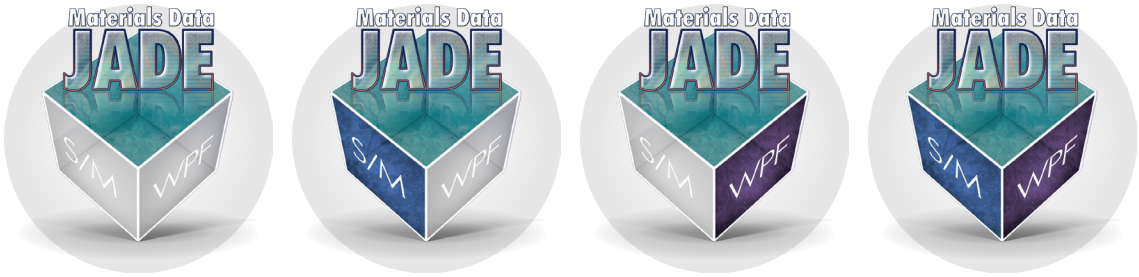
- Reads all vendor pattern files
- Handles variable/fixed-slit data
- Auto peak search and multi-filter search
- Simulate powder patterns from crystal structures
- No annual renewal fee
- Individually licensed for workstations
- Hardware Independent - supports a wide range of diffractometers

PHASE ID (SEARCH/MATCH)

- Found in Levels
  2A: Search/Match
  3: Search/Match and Whole Pattern Fitting

WPF + RIETVELD

- Found in Levels
  2B: Whole Pattern Fitting (WPF)
  3: Search/Match and WPF



Level 1	Level 2 (A or B)		Level 3 ...or choose JADE Pro, and get it all and more!
Base	Base	Base	Base
	Phase ID (S/M)		Phase ID (S/M)
		WPF + Rietveld	WPF + Rietveld

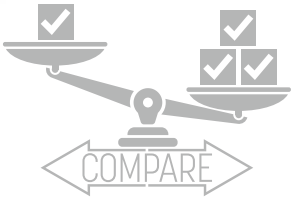
Phase ID (S/M) - JADE Standard Level 2A or Level 3
Profile-based Search/Match with minor and trace phase ID or search on a single peak. Ability to include chemistry filters and unit cell data as well as preferred-orientation.

WPF + RIETVELD - JADE Standard Level 2B or Level 3
Quantify weight percentages and identify minor phases quickly and easily.

JADE QA

A special build meant for production line Quantitative Analysis (QA) typically carried out by a technician. Requires a setup file created by an analytical scientist using JADE Pro. JADE QA runs independently of JADE Pro and was designed to extend the power of Rietveld Quantitative Analysis (QA) to those in your organization responsible for overseeing consistencies in production who may or may not have a background in XRD.

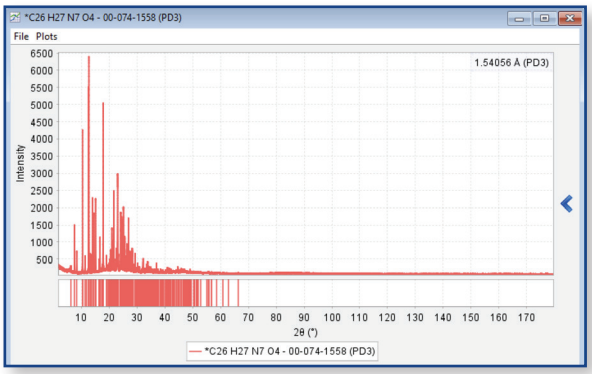
...compare on the next page!



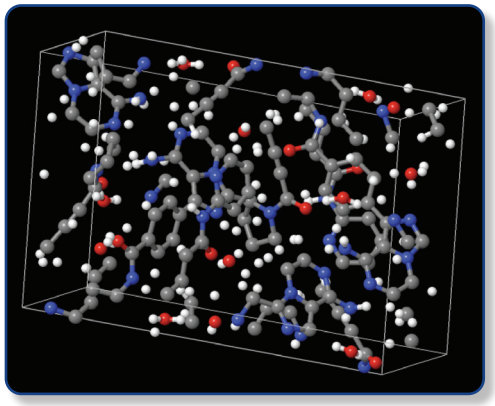
PDF-5+ 2025

The Powder Diffraction Standard

Featuring 1,104,100+ entries
626,100+ entries with atomic coordinates



Used to treat various types of non-Hodgkin lymphoma. External standard is mixture of NIST SRM Si and Al_2O_3.



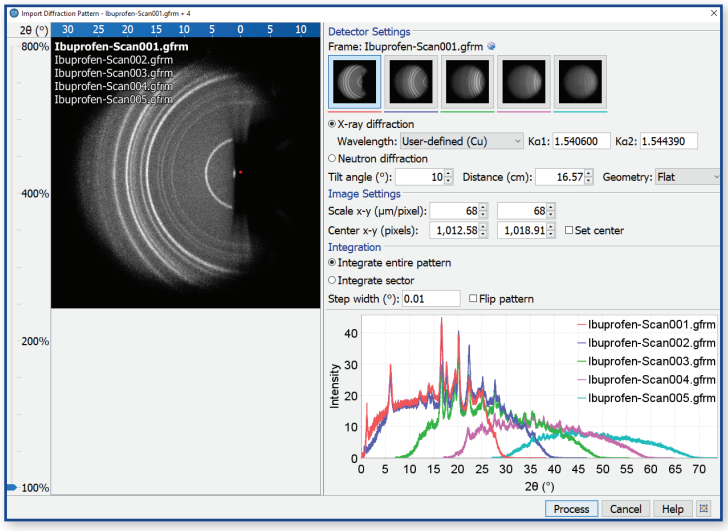
- Features 457,800+ entries for inorganic materials and 650,218+ entries for organic materials
- All entries have digital patterns for use in total pattern analysis
- 997,300+ entries have I/I_c values for quantitative analysis by Reference Intensity Ratio
- All entries are stored in a standardized format for easy search and interpretation
- All entries go through a rigorous editorial process to ensure quality

SIEVE/SIEVE+ 2025

Search and Identify

All PDF databases now include Sleve/Sleve+ at no additional cost!

ICDD's search identification programs, Sleve for PDF-2 and Sleve+ for PDF-5+ and PDF-4, are designed to search and identify unknown materials. Sleve/Sleve+ are integrated into the ICDD databases to allow the use of the extensive data mining interfaces, searches, and sorts available to improve the accuracy and precision of the phase identification process.



Sleve+ importation of five 2D diffraction patterns, integrated for phase identification analysis, ibuprofen API. (Data provided by S. Zdzieszynski and S. Misture, Alfred University).

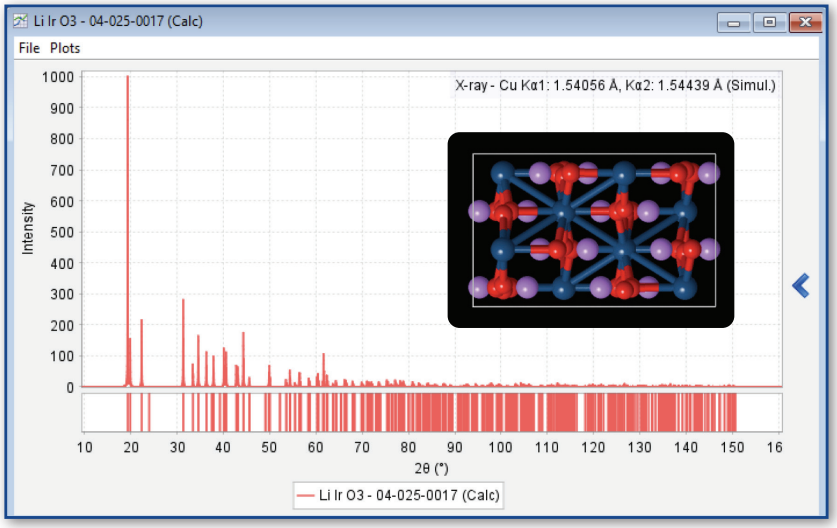
- Designed to search and identify unknown materials
- Complementary with most commercial software programs
- Match filter algorithms - better results, more accuracy
- Identify non-crystalline materials and complex multi-phase specimens
- Strength of Sleve/Sleve+ is evident in the analysis of minor and trace phases

Sleve+ offers a variety of algorithms and options that allow users to optimize results for particular chemistries for both standard and non-standard diffraction systems.

PDF-4/Axiom 2025

Quality Plus Value

Featuring over 110,800+ entries
80,700+ entries with atomic coordinates



- Data focused on ambient entries
- Fundamental mineral entries
- (3) year license term
- Low cost additional license
- 6-year and 9-year prepaid packages

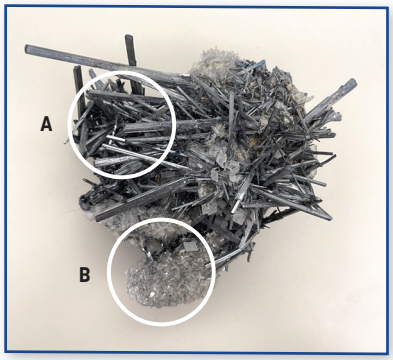
ICDD's Data Mining Software Included

ANX: ABX3. LPF Collection Code: 1953348. Sample Preparation: STARTING MATERIALS: IrO_2,Li_2CO_3. COMPOUND PREPARATION: ball-mailled for 0.5 h, heated at 1273 K for 86 h, electrochemical reaction. ATMOSPHERE: oxygen. Article Title: Evidence for anionic redox activity in a tridimensional-ordered Li-rich positive electrode β-Li_2IrO_3. Wyckoff Sequence: h g f e. Unit Cell Data Source: Powder Diffraction.

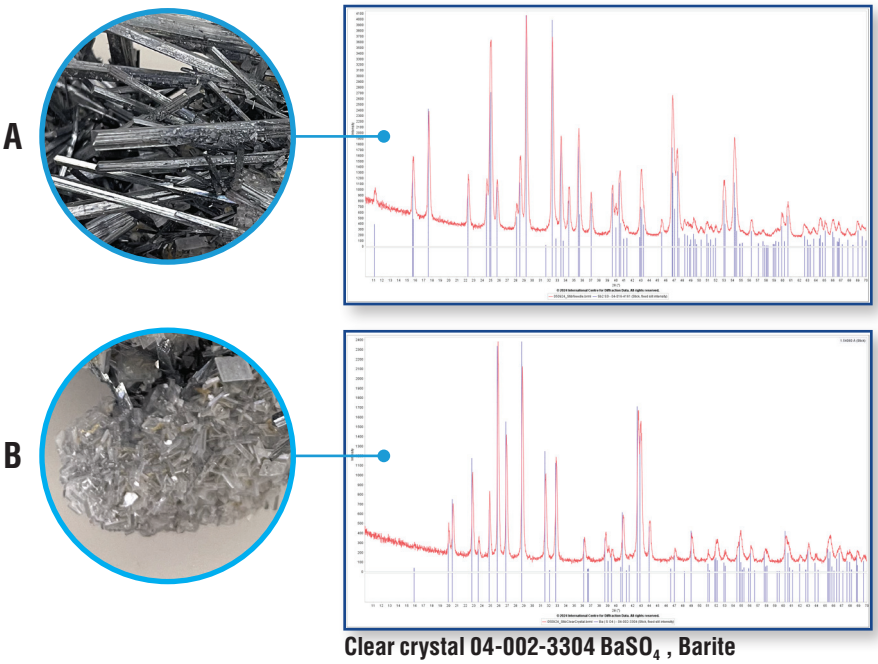
PDF-4/Minerals 2025

Comprehensive Mineral Collection

Featuring 53,400+ entries
43,900+ entries with atomic coordinates



Dark needles (Stibnite, Sb_2S_3) on a matrix of clear platy crystals(Barite, $BaSO_4$)



Dark needle 04-016-4161 Sb_2S_3 , Stibnite

Clear crystal 04-002-3304 $BaSO_4$, Barite

- All entries have digital patterns for use in total pattern analysis
- 41,300+ entries have I/I_c values for quantitative analysis by Reference Intensity Ratio
- Classified by IMA designations
- A subset of the PDF-5+ database with all of the features and capabilities, targeted toward minerals and mineral related compounds