

AI Search

UV/Vis+ Photochemistry Database – User Guide

1 What the search does

The AI search answers questions written in plain language. Instead of entering search terms, you write the sentence you would say to a colleague.

are there temperature dependent absorption cross sections of SO₂ in the gas phase?

The classic text search remains available alongside it. It is still the better choice when you know exactly what you are looking for — a particular CAS number, for instance, or an author's name.

How an answer is produced

Your question is first translated into search conditions: substance, phase, spectral range, temperature, year. The application then searches a database built from all data sheets of the collection. This step is exact arithmetic, not guesswork.

Only at the end does a language model write a summary from the data sheets that were found. It may draw on those results and on nothing else.

Important when judging a result: what counts is the list of matches, not the answer text. The list comes from the database and can be verified. The answer text is an assessment of the most relevant work and deliberately does not name every match.

Three separate collections

The search runs separately in each section of the site. Each one has its own index and sees only its own data sheets — a search in one section can never return matches from another.

2 What you see on the page

Section	Meaning
Answer	A summary of the most relevant matches, one or two paragraphs.
From the website	Pages of this site that match your question — the advisory group, the company, subscription terms. The link jumps straight to the passage and highlights it.
Matching data sheets	The data sheets found, each with substance, authors, title, spectral range, temperature, phase and type of measurement.
What was actually searched for?	Expandable. Shows the search conditions derived from your question.

Every match carries two links. *View entry in the database* leads to the substance overview page, *Data sheet (text file)* to the data sheet itself. Where downloadable measurement series exist, *Data file available* appears as well.

3 What you can ask for

Property	Examples in a question
Substance	name, synonym, formula or CAS number
Spectral range	as wavelength between 200 and 300 nm , as wavenumber 34000 to 41000 cm ⁻¹ or as energy 4 to 10 eV
Spectral region	uv , vuv , euv , vis , nir , ir
Phase	gas phase , vapor , vapour , liquid , in solution , solid , matrix
Temperature	at room temperature , below 100 K
Temperature dependence	temperature dependent
Type of measurement	absorption , absorbance , cross sections , fluorescence , linear dichroism
Author	papers by Moortgat
Year	since 2015 , before 1990
Measurement files	with downloadable data files
About the site	advisory group, company, subscription, contact

These can be combined freely. The answer is written in the language of your question; a single word or a name yields an English answer.

Units of the spectral range

In spectroscopy the wavelength in nanometres, the wavenumber in cm⁻¹ and the energy in electronvolts are all in common use. All three may appear in a question; they are converted to nanometres before the search.

The conversions follow the usual relations: $\lambda \text{ [nm]} = 10^7 / \tilde{\nu} \text{ [cm}^{-1}\text{]}$ and $\lambda \text{ [nm]} = 1239.84 / E \text{ [eV]}$.

Wavelength	Wavenumber	Energy
120 nm	83,300 cm ⁻¹	10.33 eV
200 nm	50,000 cm ⁻¹	6.20 eV
300 nm	33,300 cm ⁻¹	4.13 eV
500 nm	20,000 cm ⁻¹	2.48 eV
1000 nm	10,000 cm ⁻¹	1.24 eV

Note the reversal: a range from 200 to 300 nm corresponds to 50,000 down to 33,300 cm^{-1} . The limits swap places, which the search takes into account.

The data sheets themselves are inconsistent here — sometimes nanometres, sometimes cm^{-1} or eV with the nanometre value in brackets. This makes no difference to the search: everything is converted to nanometres when the database is built.

Naming a spectral region

Words such as `uv` or `ir` are treated as a range and do narrow the result. The boundaries are fixed:

Region	Range used
euv	10-121 nm
vuv	10-200 nm
uv	100-400 nm
vis	380-780 nm
nir	700-3000 nm
ir	from 700 nm

A question about *ir spectra* therefore excludes work in the UV, and a question about *uv spectra* excludes work in the near infrared. If you want every spectrum of a substance regardless of region, leave the word out. Explicit figures always take precedence over a region named in words.

Better and more difficult questions

Works well	Why
absorption cross sections of benzene in the gas phase between 200 and 280 nm	Substance, phase and range are all stated.
temperature dependent spectra of ozone	Matches the field in the data sheet exactly.
papers by Vandaele on SO ₂	Author and substance together.

More difficult	Why
uv spectrum of methane	The word <i>uv</i> restricts the result to 100-400 nm and excludes measurements in the near infrared. Omit it, or give the range in figures.
good data for chlorine	"Good" is not a property recorded in the data sheets.
everything about aromatics	Too broad; at most 30 matches are shown.

4 Limits

The search knows only what the data sheets record

The database is built from the data sheets. What is not entered there cannot be found. If a measurement made at several temperatures lacks the `Temperature dependence` marker, it may not appear when you ask for temperature dependence.

Spelling errors in the fields have the same effect. Some are compensated for — the spelling `dicroism` that is common in the collection, and the abbreviations `LD`, `CD` and `MCD`. Others only come to light when an expected match is absent.

Translating the question is the delicate step

Search conditions are derived from your question, and conditions can arise that were not intended. This is exactly what the *What was actually searched for?* section is for.

The answer text does not name every match

The summary considers the twelve highest-ranked matches and highlights some of them. For the full picture, read the list.

Further limits

- At most 30 data sheets per search.
- The search evaluates what is known *about* a measurement — range, temperature, phase, source. It does not compute with the measured values themselves and cannot compare spectra.
- To limit abuse, the number of queries per hour and visitor is capped.

5 If a match is missing or looks wrong

Before reporting a fault, three steps will usually explain what happened.

First: expand the section

What was actually searched for? shows the conditions that were derived. If something appears there that was not in your question — a phase, or a spectral range — that is the cause. Ask again without that word.

Second: read the line below the status message

If it says *Not applied: ...*, a condition could not be applied and was dropped so that any matches at all could be shown. The list is then broader than your question.

One case occurs regularly: if no data sheet carries the substance name exactly as you wrote it, the name is matched as part of a longer name instead. Related compounds then appear in the list, and the line below says so.

Third: rephrase the question

- Write the substance name as it appears in the data sheet, or use the CAS number.

- Drop restrictions that are not essential.
- Instead of `uv` or `ir`, give the range in nanometres — or give none at all.

If nothing is found at all

A line then offers the classic text search with a ready-made link. It works differently: it looks for words anywhere in the collection and finds phrasings that the conditions used here would filter out.

What helps when reporting a fault

If a match is genuinely missing or genuinely wrong, three pieces of information make a report usable:

1. The question, word for word.
2. The content of *What was actually searched for?*.
3. Which data sheet you expected, with its path — for example `hyca/74-82-8_8.txt` .

With these three, it usually takes only a few minutes to establish whether the cause lies in the translation of the question, in the search itself, or in the data sheet.

6 Data protection

The question you enter is transmitted to Anthropic PBC in the USA for processing. Your browser does not connect to Anthropic itself — the server makes that connection. Your IP address and other connection data are therefore not passed on.

For this reason the note below the input field asks you not to enter personal data. Details are set out in the privacy policy of this site.

Version: September 2026