

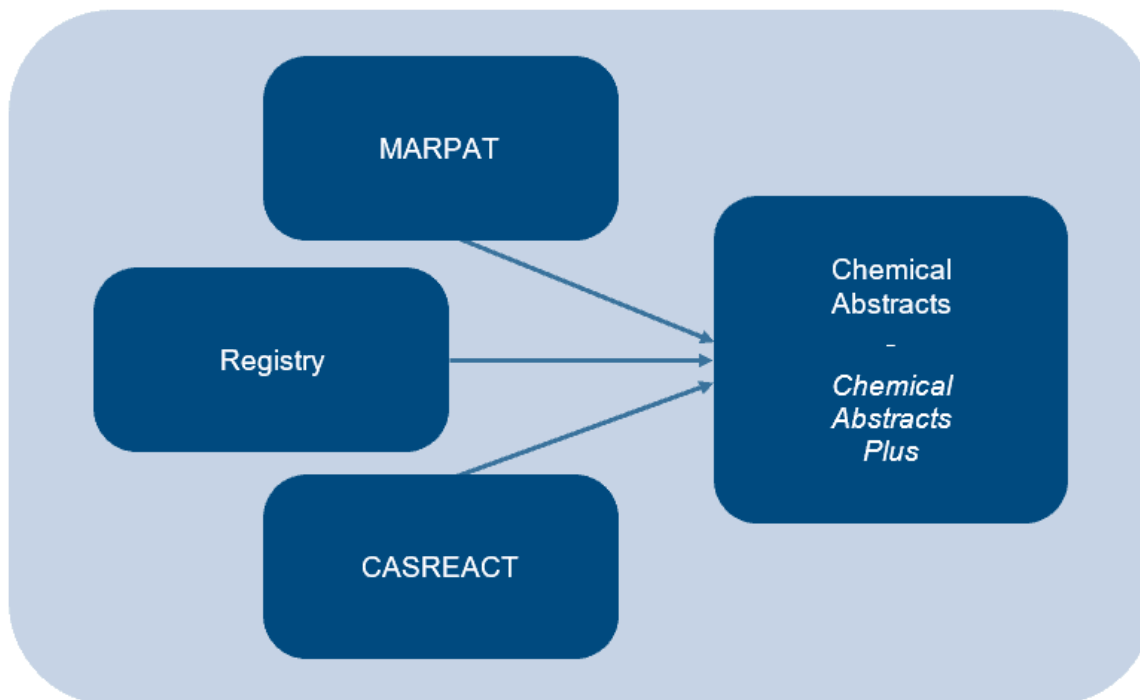
The benefits and advantages of using STN International for patent searches

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The American Chemical Society has specialised databases for chemical questions, which index substances, components, alloys, generic structures, generic biosequences, complexes, polymers, and reactions. Their use is worthwhile in many respects and is therefore recommended.

Chemistry is the science of substances and changes in substances. "Chemical Abstracts" has existed since 1907 (<https://www.cas.org/about/cas-history>) in order to make the flood of publications transparent, originally in the form of periodically printed indexed collections of summaries. Since its foundation in 1983, a large number of databases with different data sets have been summarised under the name STN International ("Scientific & Technical Information Network"), in particular the interrelated databases of the "Chemical Abstracts Service (CAS)" itself: Registry, Chemical Abstracts (Plus), MARPAT and CASREACT.



All indexed substances, components, and alloys are recorded in the "Registry" database and have a so-called "Registry Number" (the colloquially known "CAS number": e.g. acetone 67-64-1, <https://commonchemistry.cas.org/detail?ref=67-64-1>), mixtures, materials from components, and alloys with mass percentage ranges are also indexed as individual substances.

These individual substances or lists of these registry numbers can be searched for in various ways: via drawn structures, name components, mass percentages, in concrete terms, or as ranges, sum formulae, number of individual elements or components, etc.

With this result, you can then switch to the Chemical Abstracts or Chemical Abstracts Plus database, where you can display the documents (patent literature as well as scientific publications, i.e. "non-patent literature") that are indexed with the corresponding Registry Numbers. You can differentiate between patent literature and non-patent literature, narrow it down according to publication, application, and priority dates and, if necessary, restrict it by patent classification and abstract text search.

A particular advantage is the display of the so-called hits/hit structures/hit sequences together with the search result, which makes it possible, for example, in the case of non-patent literature, to make a primary relevance assessment for the document found without having to buy it in full text or find it in the first place. Patent literature can be transferred to other databases for evaluation and further processing using the publication numbers.

The MARPAT ("Markush Patents") database in turn records generic structural formulae with the option of finding patent literature that explicitly or implicitly includes or overlaps with the desired specific or generic structure ("Markush formula", e.g. H₃C-R with R = H, Me, Et, OH, aryl, NH-(C₁-6 alkyl)). You can choose between different levels of explicit or implicit labelling in the document, including different levels for individual residues/molecule parts (so-called "match levels"). The results can then be transferred to Chemical Abstracts or Chemical Abstracts Plus – Chemical Abstracts Plus is particularly up-to-date and is therefore suitable for freedom-to-operate questions and current prior art searches, but is more expensive to use; for relevant data dating further back, e.g. for opposition and nullity searches, the cheaper Chemical Abstracts database is used.

Similarly, the CASREACT database can be used to find indexed reactions in documents. Reactants and products can be defined, and their atoms identified as the same ("atom mapping").

In addition to these special options, STN International also offers a range of other databases and database clusters, mostly abstract-based, which provide access to non-patent literature in particular, which is otherwise often particularly time-consuming to search: INSPEC, Dissertation Abstracts, Science Citation Index, Food Science and Technology Abstracts, Research Disclosure, ProQuest Science & Technology, Analytical Abstracts, Materials Science Cluster, etc.

The use of STN International databases is associated with additional usage-dependent costs, which usually range from a few hundred to a few thousand euros, and also requires specialised knowledge and a good deal of experience. At Serviva GmbH and Serviva Austria GmbH, this knowledge and the necessary years of experience are available in the form of our experts from various specialised chemical fields.

The many advantages offered by access to the STN International databases for a targeted and efficient search for relevant prior art make their use highly recommendable, even taking into account the associated costs. Especially for complex tasks such as validity or freedom-to-operate (FTO) searches on chemical structures or alloy compositions, the STN databases are an almost indispensable tool that can be used by our experts at a low threshold.

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