

SOURCES FOR EVALUATING INGREDIENTS

An overview of the databases, institutions, legislation and scientific literature used for evaluations in the GreenScan app.

How we use sources

We do not rely on a single ranking or database. We compare official classifications, legislation, expert opinions and scientific studies, and we always consider the context in which an ingredient is used.

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01

How we work with sources

What matters most and why one fact is not enough.



Basic principle

An ingredient evaluation is not based on one fact or a simple hazard list. We assess evidence quality, regulatory status, concentration, use and exposure, the target group, and possible effects on health and the environment.

Three levels of sources

1 Official and legislative sources

The greatest weight is given to legislation, official classifications, databases and opinions from ECHA, the European Commission, SCCS, SCHEER, REACH, CLP, CosIng, MŽP, SZÚ and SÚKL.

2 Scientific studies and expert reviews

High-quality studies, systematic reviews, meta-analyses and relevant journal articles are important. We assess methods, sample size, study type, reproducibility and consistency with other evidence.

3 Supplementary sources and books

We use them for broader context, explanations of terms or a historical perspective.



Important notice

This document is for information and education. It is not a complete source list or a legal, toxicological, health or safety assessment of a specific ingredient or product. Current law, the competent authority, manufacturer documentation and, for medicines, the package leaflet take precedence.

Document contents

- 02 Legislation and evaluation system
- 03 Cosmetic databases and nomenclature
- 04 EU scientific committees
- 05 Czech official and expert sources
- 07 Scientific databases and search
- 08 Scientific journals and platforms
- 09 International institutions
- 10 Supplementary literature
- 11 Final notice and contact

02

Legislation and evaluation system

The European legal framework, hazard classification and GreenScan internal statements.



REACH

OFFICIAL EU

What the source contains: REACH is the main European regulation governing chemicals. Its name stands for “Registration, Evaluation, Authorisation and Restriction of Chemicals”. REACH aims to protect human health and the environment from chemical risks. It applies to substances manufactured in the EU and those imported into the EU. Manufacturers and importers must understand the properties of substances they place on the market and provide the necessary information. For certain particularly hazardous substances, including substances of very high concern, REACH may require restrictions or authorisation for their use.

How we use it: We use the regulation for information on substance registration, restrictions, authorisation, substances of very high concern and obligations that apply in the EU market.

ECHA

OFFICIAL EU

What the source contains: ECHA, the European Chemicals Agency, manages expert information on chemicals, their classification, safety, restrictions and obligations under European chemicals legislation.

How we use it: ECHA is one of our main sources. We use it to verify substance classifications, hazard information, restrictions, regulatory status and available data on effects on health and the environment.

CLP

CLASSIFICATION

What the source contains: CLP is the European regulation on the classification, labelling and packaging of chemical substances and mixtures. It is based on the global GHS system. CLP determines how hazardous substances and mixtures must be classified and labelled. This is why packaging and safety data sheets include elements such as hazard pictograms, signal words, H-statements and P-statements.

How we use it: From CLP we use harmonised classifications, hazard classes, warning pictograms and especially the H-statements used in negative ingredient evaluations.

GHS

CLASSIFICATION

What the source contains: GHS stands for the Globally Harmonized System of Classification and Labelling of Chemicals. It is an international system that standardises how the hazards of chemical substances and mixtures are described. The European CLP Regulation is based on GHS and implements it within the European legal framework.

How we use it: We use GHS as the international framework for understanding hazard classification and its implementation in the European CLP system.

H-statements

CLASSIFICATION

What the source contains: H-statements are standardised hazard statements. They describe a specific hazard of a substance or mixture, such as toxicity, irritation, carcinogenicity, mutagenicity, effects on reproduction or toxicity to aquatic organisms. GreenScan relies on H-statements mainly for negative ingredient evaluations. Where H-statements do not cover properties important to our evaluation, we supplement them with our own internal system of GS statements.

How we use it: H-statements are one of the fundamental sources for negative evaluations. They present standardised descriptions of risks to human health and the environment.

GS statements

INTERNAL SYSTEM

What the source contains: GS statements are GreenScan's internal system. We use them for properties that are not always adequately covered by standard H-statements but are important for understanding an ingredient's impact. These may include suspected endocrine activity, bioaccumulation, environmental persistence, a problematic raw-material origin, microplastics, poor biodegradability or other properties related to health and the environment. GS statements are not assigned arbitrarily; they are supported by expert sources, studies, databases or institutional opinions.

How we use it: We add GS statements where standard H-statements do not capture properties important to GreenScan, such as endocrine activity, persistence, bioaccumulation, microplastics or a problematic raw-material origin. Every GS statement must be supported by expert data.

G statements

INTERNAL SYSTEM

What the source contains: G statements are GreenScan's internal system for positive ingredient properties. They help describe when an ingredient serves a useful function for the skin, hair or product. Examples include moisturising, regenerating, soothing, antioxidant or protective effects, support for healing, protection of the skin barrier or another beneficial function.

How we use it: We use G statements to describe positive ingredient functions clearly, such as moisturising, soothing, antioxidant or protective effects.

03

Cosmetic databases and nomenclature



How we identify ingredients and verify their cosmetic functions and legal context.

INCI

IDENTIFICATION

What the source contains: INCI stands for International Nomenclature Cosmetic Ingredient. It is the international naming system for cosmetic ingredients. INCI names are used in cosmetic product ingredient lists so that the same ingredient can be identified across products, brands and countries. Ingredients are generally listed in descending order by quantity, from the highest to the lowest amount. Low-concentration ingredients and certain colourants may be subject to exceptions under the rules.

How we use it: We use INCI to match an ingredient in a product's ingredient list unambiguously with its GreenScan database entry and to connect names across languages and brands.

CosIng

OFFICIAL EU

What the source contains: CosIng is the European Commission database for cosmetic substances and ingredients. It provides information on cosmetic ingredients, their functions, names and links to European cosmetics legislation. For GreenScan, CosIng is particularly important for verifying ingredient names, functions and the legislative context. The database is informational and does not replace a complete safety assessment of a specific product.

How we use it: In CosIng we verify official INCI names, declared cosmetic functions and links to European cosmetics legislation. We do not use the database as standalone proof of safety.

Cosmetics Regulation

OFFICIAL EU

What the source contains: Regulation (EC) No 1223/2009 of the European Parliament and of the Council is the principal European legislation governing cosmetic products. It covers safety, labelling, the responsible person, prohibited and restricted substances, permitted preservatives, UV filters, colourants and other rules for cosmetics placed on the EU market. GreenScan considers this framework particularly when working with cosmetic ingredients, their functions and legal restrictions.

How we use it: We use the Regulation for information on prohibited and restricted substances, permitted preservatives, UV filters, colourants, labelling and other rules for cosmetics on the EU market.



Understand what a database entry means

An ingredient's presence in a database, or authorisation for its use in cosmetics, does not automatically mean that it is suitable for everyone, at every concentration or for every method of use. The specific exposure and product formulation always matter.

04

EU scientific committees

Expert opinions, legal documents and risk assessments at European level.



SCCS

OFFICIAL EU

What the source contains: SCCS, the Scientific Committee on Consumer Safety, issues expert opinions on the safety of non-food consumer products.

How we use it: We use SCCS opinions particularly for cosmetic ingredients, preservatives, colourants, UV filters, allergens and other substances to which consumers are directly exposed.

SCHEER

OFFICIAL EU

What the source contains: SCHEER, the Scientific Committee on Health, Environmental and Emerging Risks, addresses health and environmental risks, including emerging risks. It is relevant to GreenScan when evaluating the effects of substances on the environment, human health or combined risks.

How we use it: We use SCHEER opinions for topics that connect human health, the environment and emerging risks.

European Commission

OFFICIAL EU

What the source contains: The European Commission is the executive body of the European Union. In the fields of chemicals and cosmetics, it prepares and implements rules, manages certain databases and issues documents to protect consumer health and the environment.

How we use it: European Commission documents provide the current legal and methodological context for REACH, CLP, cosmetics, the CosIng database and EU scientific committees.

EFSA

OFFICIAL EU

What the source contains: EFSA, the European Food Safety Authority, assesses risks associated with food, feed, contaminants, pesticides and other substances that may affect human health through the diet.

How we use it: We use EFSA as a supplementary expert source when assessing broader human exposure to chemicals through food, contaminants, pesticides or the environment.

05

Czech official and expert sources

Czech legal, health and environmental context.



Ministry of the Environment of the Czech Republic

OFFICIAL CZ

What the source contains: The Ministry of the Environment of the Czech Republic provides information on chemicals, Czech chemicals legislation and the European REACH and CLP regulations.

How we use it: We use MŽP materials for the Czech legislative and environmental context, especially regarding REACH, CLP, chemicals law, waste, water and the effects of substances on nature.

CENIA

OFFICIAL CZ

What the source contains: CENIA is the Czech Environmental Information Agency. It provides expert support in environmental matters and publishes information on selected environmental topics, including chemicals and CLP.

How we use it: CENIA materials provide Czech environmental context, data and expert information on selected environmental and chemicals topics.

SZÚ

OFFICIAL CZ

What the source contains: The National Institute of Public Health is a Czech expert institution in public health protection. Its work includes cosmetic products, toxicology, health safety and laboratory assessment.

How we use it: We use SZÚ as a Czech expert source for public health protection, cosmetics, toxicology, health risks and consumer safety.

SÚKL

OFFICIAL CZ

What the source contains: The State Institute for Drug Control is the principal Czech authority supervising medicines and medical devices.

How we use it: For medicinal products and substances used in medicines, we verify official information in SÚKL databases and documents. The package leaflet and the advice of a doctor or pharmacist remain decisive.

NZIP

OFFICIAL CZ

What the source contains: The Czech National Health Information Portal provides accessible health information for the public. It can serve as a supplementary source on health, cosmetic safety, allergies, skin and prevention.

How we use it: We use NZIP as an accessible supplementary source for the public on health, allergies, skin, prevention and the safe use of products.

06

Identification of chemical substances



CAS RN / CAS number

IDENTIFICATION

What the source contains: A CAS Registry Number is the registration number of a chemical substance. It enables precise identification across databases, languages and names. One substance may have several different names, synonyms or trade names. The CAS number helps confirm that the information relates to the same chemical substance.

How we use it: We use the CAS number to identify a chemical substance precisely and to verify that different names, synonyms or trade names refer to the same substance.

PubChem

IDENTIFICATION

What the source contains: PubChem is a public chemical database managed by the U.S. National Center for Biotechnology Information. It contains information on chemical structures, names, identifiers and properties, together with links to other sources.

How we use it: In PubChem we verify a substance's structure, identifiers, synonyms and links to other databases and scientific literature.



Why precise identification matters

A chemical substance may have several names, synonyms or trade names. Without verifying the identifier, data could be assigned to a different substance or a different form of the substance.

07

Scientific databases and search



Where we find studies, full texts, authors and scientific context. The quality of evidence depends on the methodology, study type, sample size, statistical analysis, limitations and consistency with other findings. We therefore do not assess an individual study in isolation.

PubMed

SCIENTIFIC

What the source contains: PubMed is a database of biomedical literature. It contains citations and abstracts from medicine, biology, toxicology, pharmacy and other health-related fields. PubMed does not itself assess the quality of every study, but it helps locate scientific articles, systematic reviews and research on a particular substance or health effect.

How we use it: We use PubMed to search for biomedical studies, systematic reviews and research on the health effects of substances. The presence of an article in the database alone is not considered proof of its quality.

PubMed Central

SCIENTIFIC

What the source contains: PubMed Central is a freely accessible archive of full-text biomedical and life-science articles. It is useful when the abstract is not sufficient and the complete study needs to be reviewed.

How we use it: We use PubMed Central to work with full study texts when an abstract is not enough and the methodology, results and limitations of the research need to be assessed.

ScienceDirect

SCIENTIFIC

What the source contains: ScienceDirect is a database of scientific articles and book chapters. For GreenScan it is particularly useful for finding studies in toxicology, environmental chemistry, cosmetic ingredients, pharmacy, microplastics and the effects of chemicals on health and the environment. ScienceDirect is operated by Elsevier.

How we use it: In ScienceDirect we search for full texts of studies and chapters in toxicology, environmental chemistry, cosmetic science, pharmacy, microplastics and other relevant fields.

Elsevier

SCIENTIFIC

What the source contains: Elsevier is a scientific publisher and the operator of ScienceDirect. It is not independent evidence that a substance is safe or hazardous, but it publishes and provides access to scientific journals, books and studies that may be relevant to an evaluation.

How we use it: We regard Elsevier as a publisher and operator of scientific platforms. The publisher's name alone is not evidence of safety or risk; the quality of the individual publication is what matters.

Web of Science

SCIENTIFIC

What the source contains: Web of Science is a citation database of scientific literature. It supports searches for scientific articles and verification of the wider academic context.

How we use it: We use Web of Science to search for scientific literature and related publications and to verify citation and academic context.

08

Scientific journals and platforms

Examples of scientific journals we consult depending on the topic.



When verifying information, we also use articles from scientific journals and publishing platforms. Selection always depends on the topic and the quality of the individual publication. Regularly used or relevant sources include:

Science

multidisciplinary scientific journal published by AAAS

The Lancet Planetary Health

human health, the environment and sustainability

Environmental Science & Technology

environmental chemistry, technology and the effects of pollution

Chemosphere

chemicals in the environment and environmental toxicology

Toxicology and Applied Pharmacology

effects of chemicals and medicines

Nature

multidisciplinary scientific journal and Nature Portfolio platform

Environmental Health Perspectives

the relationship between the environment and human health

Environment International

public health, the environment and risk assessment

Journal of Hazardous Materials

hazardous substances and their effects

International Journal of Cosmetic Science

cosmetic science, dermatology and cosmetics research



How we assess scientific evidence

Where possible, we give preference to systematic reviews, meta-analyses, opinions from expert institutions, repeatedly confirmed findings and sources with clearly described methodology.

09

International institutions

Global methodologies and expert reviews that supplement European and Czech sources.



WHO

INTERNATIONAL

What the source contains: WHO, the World Health Organization, addresses the health effects of chemicals, risk prevention and the promotion of safer chemicals management.

How we use it: We use WHO opinions and reviews on the health effects of chemicals, risk prevention and safer chemicals management.

OECD

INTERNATIONAL

What the source contains: OECD provides methodologies and documents on chemical safety, chemical testing, risk assessment and pollution prevention.

How we use it: We use OECD methodologies for the context of chemical testing, chemical safety, risk assessment and pollution prevention.

EPA

INTERNATIONAL

What the source contains: The U.S. EPA is the United States Environmental Protection Agency. It can serve as a supplementary source of information on chemicals, the environment, water, waste, pesticides and risk assessment.

How we use it: We use the U.S. EPA as a supplementary source on chemicals, water, waste, pesticides, the environment and risk-assessment methods.

10

Supplementary literature

We use books for broader context, explanations of terms and a historical perspective. Books and popular-science sources are generally not the main basis for the final risk evaluation.



Cosmetics and ingredients

Title

Cosmetics Unmasked: Your Family Guide to Safe Cosmetics and Allergy-Free Toiletries
Stephen Antczak, Gina Antczak
ISBN: 0-00-710568-1

A Consumer's Dictionary of Cosmetic Ingredients: Complete Information About the Harmful and Desirable Ingredients Found in Cosmetics and Cosmeceuticals
Ruth Winter, M.S.
ISBN: 1-4000-5233-5

Toxic Beauty: The Hidden Chemicals in Cosmetics and How They Can Harm Us
Dawn Mellowship
ISBN: 978-1-85675-306-7

Milady's Skin Care and Cosmetic Ingredients Dictionary
Natalia Michalun, Varinia Michalun
ISBN: 1-4354-8020-1

Tajemství kosmetiky
Vít Syrový
ISBN: 978-80-903137-7-4

What's Really in Your Basket?: An Easy to Use Guide to Food Additives and Cosmetic Ingredients
Bill Statham
ISBN: 1-84024-607-3

Kosmetik-Inhaltsstoffe von A bis Z
Der kritische Ratgeber
ISBN-13: 978-3855029747

Kursbuch Kosmetik
Rita Stiens
ISBN-13: 978-3517076041

Food, nutrition and plant sources

Title

Tajemství výrobců potravin
Vít Syrový
ISBN: 978-80-903137-9-8

Zelené koření
Zdenka Krejčová, Dagmar Lánská
ISBN: 978-80-7442-070-2

Genius Foods: Become Smarter, Happier, and More Productive While Protecting Your Brain for Life
Max Lugavere
ISBN: 978-80-7555-179-5

11

Final notice and contact

What this document means, what it does not replace and how to report an inaccuracy.



Informational purpose

GreenScan provides clear guidance on ingredients. It does not replace a doctor, pharmacist, toxicologist, regulatory authorities, a product safety assessment or the manufacturer's official documentation. Evaluations reflect the data available and may change as new evidence emerges or legislation is amended.



What is always decisive

For a specific product, the complete formulation, concentrations, method of use, frequency and duration of exposure, target group and skin condition must be considered. For medicines, the package leaflet and advice from a doctor or pharmacist are decisive. For professional products, the manufacturer's documentation and the relevant safety assessment apply.



Source updates

We continuously update sources and evaluations as data become available. If you find an inaccuracy, outdated information or a missing expert source, please contact us. Include the ingredient name, a link to the source and a brief explanation.

This material was created by GreenScan in cooperation with the partners of the GreenGate₂ project.

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