



Alfa Laval Restricted Substance List

Formerly known as the Alfa Laval Group's Black and Grey List

Introduction

The Alfa Laval Restricted Substance List (AL RSL) provides information about restrictions on the presence of substances in Alfa Laval Groups processes and products (materials, components, and parts of our products) as well as packaging. The list includes legislations and global agreement deemed relevant for our products and area of business. This requirement is in addition to any local legislations. Any presence of substances regulated in the listed legislations must be reported to Alfa Laval for further evaluation.

The Alfa Laval Restricted Substance List supersedes Alfa Laval Group Black and Grey List.

The AL RSL list is divided into three different categories:

- **Banned** substances are substances which are prohibited.¹
- **Restricted** substances are prohibited in certain applications relevant to the Alfa Laval Group. A restricted substance may be used if the application is unmistakably outside the scope of the legislation in question.
- **Risk substances**² are substances which presence must be evaluated and monitored. This includes substances currently being evaluated for regulations applicable to the Banned or Restricted categories, or substances with legal requirements for reporting and/or monitoring. Responsible product owners must be aware of the associated legal notification requirements and ensure legal compliance to these requirements. They shall also evaluate the potential risks with continued use of a risk substances.

1. *Prohibited to use, or put on the market, regardless of application. Thresholds might apply.*

2. *Category formerly known as "Substance of Concern"*

Alfa Laval Restricted Substance List

The legislative list

Banned

- EU Directive 2013/59/Euratom on ionizing radiation
- EU Regulation 2024/590/EC on substances that deplete the ozone layer, Annex I
- Stockholm Convention. Substances listed in Annex A: Elimination
- EU Regulation 2019/1021/EC on persistent organic pollutants Annex I, POP
- EU Regulation 1907/2006/EC REACH Annex XIV
- EU Regulation 1907/2006/EC REACH Annex XVII, entries 1, 6, 24-26, 68

Restricted

- EU Regulation 2024/573/EC on fluorinated greenhouse gases
- Stockholm Convention. Substances listed in Annex B: Restriction
- EU Regulation 2019/1021/EC on persistent organic pollutants Annex II, POP
- EU Regulation 649/2012/EC concerning the import and export of hazardous chemicals, PIC
- EU Regulation 1907/2006/EC REACH Annex XVII, entries 2, 4, 5, 12-21, 23, 31-38, 41, 43, 45, 46, 47, 49, 50, 59-63, 70, 71, 74, 76
- EU Directive 2011/65/EU RoHS 2
- EU Regulation 2023/1542/EC on batteries and waste batteries
- EU Directive 94/62/EC on packaging and packaging waste
- Resolution MEPC 379(80) - IMO regulation 2023 Guidelines for the development of the Inventory of Hazardous Materials
- EU Regulation 1257/2013/EC on ship recycling and amending
- EU 2017/852 Regulation on mercury
- US Toxic Substances Control Act Section 6(h): Regulation of Persistent, Bioaccumulative, and Toxic Chemicals Under TSCA Section 6(h)

Risk Substances

- Stockholm Convention: Proposed POP Candidates
- US Frank Wall Street Reform and Consumer Protection Act, Section 1502
- REACH: Current recommendations for inclusion in the Authorisation List
- REACH: Candidate List of Substances of Very High Concern for Authorisation
- REACH: Proposals to identify Substances of Very High Concern (submitted)
- REACH: Submitted restrictions under consideration (if proposed restriction is applicable to Banned or Restricted categories)
- EU Regulation 2021/821 Dual Use (recast)
- EU Regulation 2024/590/EC on substances that deplete the ozone layer, Annex II

For detailed information on the specific substances in the above regulations, please request the associated supporting document "AL RSL - individual substances" (document number CRC-22-002 rev 3.0).

Alfa Laval Restricted Substance List

Changes from previous revision of AL RSL

This revision is the annual major update of Alfa Laval Restricted Substance List. A summary of relevant changes is given below.

The legislative list, updates:

- EU Regulation 1907/2006/EC REACH Annex XVII:
 - Entries 7 and 8 have been removed from RSL
 - Entry 70 has been added

Applicable updates to all the listed regulations have been included in the "AL RSL – individual substances" (document number CRC-22-002 rev 3.0).

Updated information on substances and restrictions

General updates:

- PFAS listed in RSL has been reviewed. Subgroups have been added, legislations, categories and thresholds has been reviewed and, if relevant, updated.
- The chemical group for lead, mercury, cadmium and chromium(VI) have been updated to include related compounds (e.g. salts) in the following four legislations:
 - EU Directive 2011/65/EU RoHS 2
 - Resolution MEPC 379(80) - IMO regulation 2023 Guidelines for the development of the Inventory of Hazardous Materials
 - EU Regulation 1257/2013/EC on ship recycling and amending
 - EU Regulation 2023/1542/EC on batteries and waste batteries (lead, mercury and cadmium, but not chromium, is restricted in this regulation).
 - A clarification that the thresholds are based on the weight % of the metal has been added to the "threshold levels" column.

Banned substances:

- EU Regulation 2019/1021/EC on persistent organic pollutants Annex I, POP
 - Hexabromocyclododecane (HBCDD). Threshold for HBCDD has been lowered to < 75 mg/kg (0,0075 % by weight).
 - Added methoxychlor and related substances. Threshold 0,01 mg/kg (0,000001 % by weight) in substances, mixtures or articles.

Alfa Laval Restricted Substance List

- EU Regulation 1907/2006/EC REACH Annex XVII
 - Undecafluorohexanoic acid (PFHxA), its salts and PFHxA related substances has been added to Annex XVII. Threshold 25-1000 ppb.

Restricted substances:

- EU Regulation 649/2012/EC concerning the import and export of hazardous chemicals, PIC
 - 40 hazardous chemicals have been added to PIC. From 1st of March 2025, EU exporters are required to notify their intention to export these chemicals.

Risk substances:

- REACH Candidate List of Substances of Very High Concern for Authorisation (SVHC)
 - Five entries have been added to the Candidate list and one have been updated

Substance Name	CAS No	EC No
6-[(C10-C13)-alkyl-(branched, unsaturated)-2,5-dioxopyrrolidin-1-yl]hexanoic acid.	2156592-54-8	701-118-1
O,O,O-triphenyl phosphorothioate	597-82-0	209-909-9
Octamethyltrisiloxane	107-51-7	203-497-4
Perfluamine	338-83-0	206-420-2
Reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives.	192268-65-8	421-820-9
Triphenyl phosphate	115-86-6	204-112-2

- Two substances have been proposed for the REACH Candidate List:

Substance Name	CAS No	EC No
Formaldehyde	50-00-0	200-001-8
Reactive Brown 51	-	466-490-7

Alfa Laval Restricted Substance List

- Two substances have been withdrawn from the list of proposed substances for the REACH Candidate list:

Substance Name	CAS No	EC No
Barium chromate	10294-40-3	233-660-5
1,1,1,3,5,5,5-Heptamethyltrisiloxane	1873-88-7	217-496-1

- REACH: Current recommendations for inclusion in the Authorisation List (REACH Annex XIV):

- Six substances have been added to be recommended for the Authorisation list:

Substance Name	CAS No	EC No
Bis(2-ethylhexyl) tetrabromophthalate covering any of the individual isomers and/or combinations thereof	-	-
Bis(2-ethylhexyl) tetrabromophthalate.	26040-51-7	247-426-5.
Barium diboron tetraoxide.	13701-59-2	237-222-4.
Diphenyl(2,4,6-trimethylbenzoyl) phosphine oxide	75980-60-8	278-355-8
S-(tricyclo(5.2.1.0 ^{2,6})deca-3-en-8(or 9)-yl O-(isopropyl or isobutyl or 2-ethylhexyl) O-(isopropyl or isobutyl or 2-ethylhexyl)phosphorodithioate. X4261.	255881-94-8	401-850-9
Melamine	108-78-1	203-615-4