

Lumileds
Environmental Compliance Declaration
for
Automotive LED retrofit bulbs

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General Compliance

Lumileds is committed to supplying products compliant with relevant laws, rules, and obligations imposed by relevant governmental bodies, including sustainability. Lumileds requirements on Hazardous Substances in our products are sometimes more stringent than existing laws, rules, and regulations as described in detail by our *Lumileds List of Regulated Substances in Products and Product Packaging* (“Lumileds RSL”). The document contains minimum requirements for applicable legislation expanded by the GADSL and Lumileds’ policies. Due to frequent legal developments, Lumileds RSL is being updated accordingly and is part of the general purchasing conditions. Each Lumileds business, each supplier, and each brand licensee must ensure full compliance with the most recent version, which is publicly available at [Lumileds RSL](#).

Lumileds List of Regulated Substance List in Products and Product Packaging (“Lumileds RSL”)

This document contains minimum requirements related to various applicable legislative acts expanded by the GADSL and Lumileds own requirements. The Lumileds RSL is part of Lumileds’ global policy and is included in Lumileds’ general purchasing conditions. Each Lumileds business, each supplier, and each brand licensee is required to ensure product compliance with a set of requirements. The Lumileds RSL can be found at <https://www.lumileds.com/uploads/563/ED37-pdf>.

Lumileds requires that

- all supplied goods [raw materials, components, (semi)finished products, and
- all supplied packaging materials, and
- selected manufacturing processes

comply with all applicable requirements stated in this document.

PART A: Legal Requirements

Regulation 1907/2006 concerning the Registration, Evaluation, Authorisation & Restriction of Chemicals

Article 33 of the Regulation concerning REACH imposes an obligation on suppliers of articles¹ to notify its recipients if an article exceeds 0.1 wt.% of a substance of very high concern (SVHC) listed in the REACH “Candidate List” [Article 59(10) of this regulation]. At a minimum, the name of that SVHC on the Candidate List must be communicated. Please note that the European Chemicals Agency regularly updates the Candidate List of SVHC, and the subsequent screening for SVHC in our products is an ongoing process involving our suppliers. All products of the category *conventional automotive bulbs* do not contain an SVHC of the candidate list above 0.1 wt.% per article.

In addition to Article 33, all products comply with Article 67 and the associated Annex XVII.

¹ Definition acc. to REACH regulation 1907/2006/EC under Article 3(3): *Article means an object which during production is given a special shape, surface or design which determines its function to a greater degree than does its chemical composition.*

End-of-life vehicle²

Risk materials⁴ of the products have been tested and determined to comply with EU Directive 2000/53/EC on end-of-life vehicles (ELV) and its enforced amendments. <http://ec.europa.eu/environment/waste/elv/index.htm>

Please note that some products of our total product portfolio are assembled with materials and components which are exempted as outlined in Annex II:

# of exemption	Materials and components	Scope and expiry date of the exemption
3	Copper alloys containing up to 4 % lead by weight	This exemption shall be reviewed in 2021
8(a)	Lead in solders to attach electrical and electronic components to electronic circuit boards and lead in finishes on terminations of components other than electrolyte aluminum capacitors, on component pins, and on electronic circuit boards.	Vehicles type-approved before 1 January 2016 and spare parts for these vehicles.
8(e)	Lead in high melting temperature type solders (e.g., lead-based alloys containing 85 % by weight or more lead)	This exemption shall be reviewed in 2019
10(a)	Electrical and electronic components contain lead in a glass or ceramic, in a glass or ceramic matrix compound, in a glass-ceramic material, or in a glass-ceramic matrix compound. This exemption does not cover the use of lead in: — glass in bulbs and glaze of spark plugs, —dielectric ceramic materials of components listed under 10(b), 10(c), and 10(d).	---
15(a)	Mercury in discharge lamps for headlight application	Vehicles type-approved before 1 July 2012 and spare parts for these vehicles

Restriction of the use of certain Hazardous Substances³ in Electrical and Electronic Equipment

Risk materials⁴ of the products have been tested and determined to comply with the requirements of EU Directive 2011/65/EU on the Restriction of the use of certain Hazardous Substances (RoHS) in Electrical and Electronic Equipment (EEE) and enforced amendments (e.g., 2015/863/EU, 2017/2102/EU). http://ec.europa.eu/environment/waste/rohs_eee/index_en.htm

Please note that some products of our total product portfolio are assembled with materials and components which are exempted as outlined in Annex III:

# of exemption	Materials and components	Expiry date of the exemption
4(f)-I	Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex	Expires on 24 February 2025
6(c)	Copper alloy containing up to 4 % lead by weight	Valid until 21.07.2021 - renewal request submitted on 02.01.2020
7(a)	Lead in high melting temperature type solders (e.g., lead-based alloys containing 85 % by weight or more lead)	Valid until 21.07.2021 - renewal request submitted on 06.01.2020
7(c)-I	Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g., piezoelectronic devices, or in a glass or ceramic matrix compound	Valid until 21.07.2021 - renewal request submitted on 02.01.2020

Waste from Electrical and Electronic Equipment (WEEE)

Automotive LED retrofit light bulbs are excluded from the EU Directive 2012/19/EU scope on waste electrical and electronic equipment (WEEE). Referring to §2, section 2d of the directive: “[...] this Directive shall not apply to the following EEE: [...] d) means of transport for persons or goods, excluding electric two-wheel vehicles which are not type-approved;”

² Limited to products in the scope of corresponding legislation on ELV

³ Limited to products in the scope of corresponding legislation on RoHS

⁴ Risk materials as defined in the RoHS Enforcement Guidance & relevant IEC standards

Persistent Organic Pollutants

Lumileds products have been screened and determined to comply with “EU Regulation 2019/1021 on persistent organic pollutants (recast)” and its enforced amendments.

[Understanding POPs - ECHA \(europa.eu\)](https://echa.europa.eu/understanding-pop)

[Legislation - ECHA \(europa.eu\)](https://echa.europa.eu/legislation)

Ozone Depleting Substances

Lumileds products have been screened and determined to comply with

- EU Regulation 1005/2009/EC on substances that deplete the ozone layer and its enforced amendments https://ec.europa.eu/clima/policies/ozone/regulation_en
- EU Regulation 517/2014 of the European Parliament and of the Council of 16 April 2014 on fluorinated greenhouse gases and repealing Regulation (EC) No 842/2006 Text with EEA relevance https://ec.europa.eu/clima/policies/f-gas/legislation_en

Biocidal Products Regulations

Lumileds products have been screened and determined to comply with EU Regulation 528/2012/EC concerning the making available on the market and use of biocidal products (BPR) and its enforced amendments.

<https://echa.europa.eu/regulations/biocidal-products-regulation/understanding-bpr>

Packaging and Packaging Waste

Lumileds product packaging has been screened and determined to comply with “EU Directive 2004/12/EC amending Directive 94/62/EC on packaging and packaging waste” and its enforced amendments.

http://ec.europa.eu/environment/waste/packaging/index_en.htm

California Proposition 65

The Lumileds product portfolio fully complies with the warning requirements according to 27 CCR § 25601 et. seq. (California’s Safe Drinking Water and Toxic Enforcement Act of 1986 – Article 6 Clear and Reasonable Warnings) operative August 30th, 2018. [Proposition 65 - OEHHA \(ca.gov\)](https://oehha.ca.gov/proposition-65).

Automotive LED retrofit bulb products have been assessed based on the presence of any CP65-listed chemical in combination with exposure scenarios under intended and foreseeable conditions. None of our LED level 1 products require California Proposition 65 warnings.

Mercury – Minamata Convention & Regulation (EU) 2017/852 on mercury

The Lumileds product portfolio complies with the International Convention on Mercury (Minamata Convention) and its European implementation via Regulation 2017/852 on Mercury. Except for high-intensity discharge bulbs (HID or “xenon” bulbs) of the D1S, D1R, D2S, and D2R series, no product contains intentionally added mercury. The mentioned HID bulbs contain less than 1 mg of elemental mercury per bulb. They are not in the scope of the Minamata Convention (referring to Article 4 and Annex A) and Regulation (EU) 2017/852 (referring to Article 5 and Annex II). Concerning the EU Directive 2000/53/EC on end-of-life vehicles (ELV), we refer to exemption #15: *Mercury in discharge lamps for headlight application applicable to vehicles type-approved before 1 July 2012 and spare parts for these vehicles.*

Microplastics

Microplastics are solid plastic particles with a size of typically less than 5mm. As microplastics do not biodegrade once released into the environment, they are globally emerging as contaminants. Microplastics have been found in marine, freshwater, and terrestrial ecosystems. Their continued release contributes to the permanent pollution of our ecosystems and food chains. Exposure to microplastics in laboratory studies has been linked to a range of negative (eco)toxic and physical effects on living organisms. Globally, legal restrictions on microplastics are partially in place and are further developing: On August 30th, 2022, the European Commission published a draft proposal to amend Annex XVII of the EU REACH regulation 1907/2006/EU to restrict “*synthetic polymer microparticles where all dimensions are $\leq 5\text{mm}$ and/or the length of the particles is $\leq 15\text{ mm}$ with a length to diameter ratio >3* ”. In March 2022, United Nations Environmental Assembly (UNEA) discussed a legally binding, international “Plastic Treaty” to combat plastic pollution by 2024. By enacting the Microbead-Free Waters Act of 2015 (MFWA), The United States prohibits manufacturing, packaging, and distributing cosmetics containing plastic microbeads. The Canadian Environmental Protection Act of 1999 included Microbeads in Toiletries Regulations in January 2018. Lumileds products do not contain intentionally added microplastics, nor are they supposed to create microplastics over their lifetime based on the intended applications and foreseeable conditions of usage.

Asbestos

Concerning the individual raw materials, parts, and components that complete the products, Lumileds prohibits using any asbestos from its suppliers. Based on the information we have received from our suppliers at the date of this declaration, Lumileds products are free of asbestos.

Perfluorinated Alkyl Substances (PFAS)

Poly- & perfluorinated alkyl substances (PFASs) is a class of synthetic organic chemical substances that at least contain one -CF₃ (“trifluoromethyl”) or -CF₂ (“difluoromethyl”) moiety without additional H, Cl, Br or I atoms attached to it. Based on that OECD classification, at least 10,000 individual compounds fall into this category, including fluoropolymers and polymers with fluorinated side chains. These “forever chemicals” are associated with severe negative environmental impacts such as:

- *increasing accumulation in our groundwater, surface water, and soil, ultimately ending up in our food chain;*
- *certain PFASs are toxic for reproduction, can harm the development of fetuses, and cause cancer development;*
- *large-scale recycling is (yet) not possible.*

Five member states of the European Union submitted a proposal regarding **restrictions on the manufacture, placing on the market, and use of PFASs** on January 23rd, 2023 ([LINK](#)). Paragraphs 5 and 6 of the proposed restriction entry text include a multitude of proposed **sector-specific derogations** referring to Table 9 of the ANNEX XV RESTRICTION REPORT ([LINK](#)). **The proposed derogation periods are 5 or 12 years, excluding an additional 18-month transition period.**

We are monitoring the development of the current proposal towards concrete restriction conditions adopted by the European Commission (EC). ECHA published a timeline ([LINK](#)) that illustrates the upcoming and already taken steps of that restriction process. Based on the future opinion of the ECHA’s committee, which will be sent to the EC for consideration, we will proactively initiate mitigation actions accordingly.

Very few products are currently affected, mainly due to the presence of certain fluoropolymers:

- all lithium coin cell batteries,
- all automotive HID bulbs of the series D1, D3, D5;
- **specific product ranges of automotive LED retrofits bulbs**

The IMDS datasheets/declaration of the impacted products above disclose the individual material that contains PFAS or is made of PFAS.

PART B: Industry-specific Requirements

Global Automotive Declarable Substances List - GADSL

The GADSL is the expected standard for declaring part compositions in the automotive industry. It provides a definitive list of substances being restricted and/or requiring declaration in specific uses to minimize company-specific requirements and ensure cost-effective management of declaration practices along the complex supply chain. The scope covers declarable substances relevant to parts and materials supplied throughout the automotive supply chain, from production to the end-of-life phase. The GADSL only covers substances expected to be present in a material or part that remains in the vehicle or part at the point of sale. GADSL is a reference for substances in IMDS. The latest version of GADSL can be accessed at <http://gadsl.org>. Lumileds automotive lighting products (signaling bulbs, halogen bulbs, high-intensity discharge bulbs, and LED solutions) are manufactured to comply with the GADSL requirements.

International Material Data System - IMDS

IMDS (www.mdssystem.com) is the recognized and increasingly mandatory compliance tool for products and components in the supply chain in the automotive industry. Suppliers are requested to make declarations in IMDS for all products used for an automotive application delivered to Lumileds. Packaging materials (i.e., wood, paper or card boxes, plastic material, containers, user manuals, labels, etc.) are excluded from IMDS reporting.

Company Name: Lumileds

Company ID: 14580

China Automotive Material Data System - CAMDS

Please get in touch with your Lumileds representative for further details in line with product information entered into CAMDS.

PART C: Other Requirements

Lumileds Policy on Environmental, Health and Safety

Please refer publicly available policy on EHS ([LINK](#)).

Conflict Minerals at Lumileds

Lumileds has a corporate Policy for a Responsible Global Supply Chain of Minerals from Conflict-Affected and High-Risk Areas ([LINK](#)).

Our latest companywide CMRT is publicly available ([LINK](#)). We also provide a CMRT exclusively for our LED products ([LINK](#)).

ISO 14001 Certification

All Lumileds manufacturing sites are certified according to ISO14001:2015 ([link](#)), and this certificate is valid until October 13th, 2023.

ISO 45001 Certification

All Lumileds manufacturing sites are certified ISO45001:2018 ([link](#)), and this certificate is valid until October 13th, 2023.

Disclaimer

This declaration intends to summarize relevant information in line with the legal and industry-specific requirements on hazardous substances in our products. This declaration shall not replace additional evaluation or testing you may need to perform to conclude compliance. Lumileds provides no warranty of results and assumes no obligation or liability concerning this information. Please note that only some of the listed information may be relevant to your intended application of our products and materials. References relating to listed regulations and industry-specific requirements described herein are by no means recommendations for the application or operation of our products. This declaration is being sustained based on our most current knowledge derived from our Hazardous Substances Compliance Management Processes. It contemplates intentionally added substances and anticipated contaminants in the composition of materials that have been supplied to us or which have been manufactured in-house. Chemical substances formed during the chemical transformation steps of the raw materials, as well as fraudulent and not intentionally added substances, are not covered. The validation of this declaration is limited to products shipped from our facilities.

Annex I: Product containing SVHC exceeding 0.1 wt.% per article

Product	Affected article (definition acc. to §3(3) of the REACH regulation)	SVHC contained above 0.1 wt. %		Weight percentage (wt. %) in affected article	SCIP notification number ⁵
		Name of Substance	CAS No.		
LED automotive retrofit lamps	Solder (LED T16, LED W21 URL/ULW, LED W21/5, LED W5W, LED W16W, LED P21/5, LED P27)	<u>Lead</u> as an alloying element in high melting temperature type solders	7439-92-1	> 85 (typically 93)	W21 URL/ULW: cbb89b0c-0a2a-45e2-874a-904d8b068821 W5W: 28b73b66-ccb8-44f5-9ddb-ff428207421d W16W: 28b73b66-ccb8-44f5-9ddb-ff428207421d P21/5: 38667c06-555a-4c29-b3c3-20252d871854 P27: 45f31e90-1810-47b8-b87b-e13ac58d8e42 W21/5: b7e2f413-b7be-4be7-af48-0eca90a13914 T16: a6550be9-3e6f-485f-a699-c94fc55ce319
LED automotive retrofit lamps	Bushing radiator (LED FOG, LED H1, LED H3, LED H4 / H4 ULW, LED H7 / H7 ULW, LED HB3/HB4, LED HIR2, LED P21 ULR/XUR/XUL/XUW, LED W21 XUR/XUL)	<u>Lead</u> as an alloying element in copper alloys	7439-92-1	≤ 4	FOG: d6782968-db98-4181-8860-c02226f565a4 H1: 6ee6fcd6-7b04-4000-97a8-091e755d2552 H3: 6ee6fcd6-7b04-4000-97a8-091e755d2552 H4: 16016ff6-2a5c-448b-b993-e1c1fe8c4769 H4 ULW: 6ee6fcd6-7b04-4000-97a8-091e755d2552 H7: 8e2a26e7-6c56-469e-a299-7d748098db7a H7 ULW: 6ee6fcd6-7b04-4000-97a8-091e755d2552 HB3/HB4: 472cd413-1da3-4a6a-9336-ac3d98a3f027 HIR2: 2181d964-f1d0-4dbf-ae39-b8d1ba22e321 P21 ULR/XUR/XUL/XUW: 913abc34-67e9-40d3-8951-aadb8b24d74b W21 XUR/XUL: 4034cb62-10f1-4a40-96b6-8d78165b5263

⁵ Any article containing an SVHC exceeding the limit of 0.1 wt.% requires an entry into the SCIP database according to article 9(1)(i) of the Waste Framework Directive 2008/98/EC ("SCIP notification").