Semtech – Halogen Free Inquiry

Dear Customer,

Thank you for your inquiry regarding the compliance of Semtech products with respect to “halogen free” initiatives.

To assist our customers and the electronics industry in their recent efforts to produce halogen-free products, Semtech Corporation has carefully analyzed the materials and the manufacturing processes we use to build our products. Specifically, Semtech has:

- Worked directly with several key customers to define a “best practice” to perform chemical analysis of materials for halogen content.
- Applied this analysis to our direct build materials and determined that the majority of our products already meet the definition of halogen free or halogen low. Please refer to our table below.
- Begin the process of replacing those few materials that do not meet the definition of halogen free to help our customers achieve compliance to industry standards in this area.

Semtech part numbers that are designated as Halogen Free or Halogen Low for the following substances and levels:

Halogen Substance Concentration Limits

Halogen Substance	Symbol	Limit (ppm)	Standard / Basis	Source Clarification
Chlorine	Cl	< 900	IEC 61249-2-21 / IPC-4101	**Not sourced from Chlorinated Flame Retardants.** Trace Cl originates from epoxy Mold compound (EMC) resin cross-linking residues.
Bromine	Br	< 900	IEC 61249-2-21 / IPC-4101	**Not sourced from Brominated Flame Retardants.** No BFRs are intentionally used in any homogeneous material.
Bromine + Chlorine (combined)	Br + Cl	< 1500	IEC 61249-2-21 / IPC-4101	Combined limit; neither sourced from halogenated flame retardants
Fluorine	F	< 900	IEC 62474	Not sourced from PFAS compounds
Iodine	I	< 900	IEC 62474	—
Astatine	At	< 900	IEC 62474	—
Antimony (flame retardant synergist)	Sb	< 1000	Industry Best Practice	Antimony trioxide (Sb_2O_3) is not intentionally used as a flame retardant synergist

Note: All limits apply per homogeneous material within the product and its packaging. Limits are measured per IEC 61249-2-21 and IEC 62474

No-Intentional-Use (NIU) Declaration — Brominated & Chlorinated Flame Retardants

In alignment with customer environmental specifications and IEC 61249-2-21 / IEC 62474 industry standards, Brominated and Chlorinated Flame Retardants are treated as No-Intentional-Use (NIU) substances for all materials. Semtech Corporation declares the following:

DECLARATION:

Semtech Corporation confirms that **no Brominated Flame Retardants (BFRs) and no Chlorinated Flame Retardants (CFRs)** are intentionally added to any homogeneous material in the product or its packaging.

Any residual Chlorine (Cl) detected in analytical testing is **not related to Brominated or Chlorinated Flame Retardants.** Trace Chlorine may originate from:

- Residual chloride ions from epoxy mold compound (EMC) curing agents (e.g., amine or anhydride hardeners)
- Trace chloride in lead frame plating baths or solder flux residues
- Ionic contaminants at sub-threshold concentrations, well below 900 ppm per homogeneous material

Similarly, any residual Bromine (Br) detected is not sourced from Brominated Flame Retardants. No PBBs, PBDEs, HBCDD, TBBPA, or other BFR compounds are intentionally used.

Applicable Standards

Standard	Description
IEC 61249-2-21	Halogen-free base laminate materials — primary definition for Cl and Br limits
IEC 62474	Material Declaration for the Electrotechnical Industry — declarable substance list; Sb, F, I, At thresholds
IPC-4101	Specification for Base Materials for Rigid and Multilayer PCBs — supplementary halogen thresholds for laminates
BS EN 14582:2016	Mandated analytical test method — oxygen bomb combustion / Ion Chromatography (IC)
IPC-1752A Class D	Full material declaration format provided to customers upon request

This declaration applies to the following Semtech part number(s): **SMDA24C-7.TBT**

Semtech Corporation will continue to support direct disclosure inquires outside the protocol noted above. Customers are encouraged to contact their Semtech sales representative for assistance.

If you have any questions, do not hesitate to contact me.

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