

Material Declaration Certificate

Intersil Corporation certifies that the material content information provided by Intersil as of the date of disclosure is representative and accurate. Intersil components designated by Intersil as "RoHS Compliant", "Pb-Free" or "Green" (defined below) do not exceed any of the Joint Industry Guide (JIG) Level-A substance thresholds and are compliant with the European Union's Restriction On Use of Hazardous Substances ("RoHS") Directive, 2002/95/EC. Material analysis details for RoHS substances are available at www.intersil.com/pb-free.

For Intersil plastic encapsulated components **NOT** designated as "RoHS Compliant", "Pb-Free" or "Green", these components are RoHS compliant with the exception of lead (Pb), which may be found in the lead frame external plating or solder balls. This situation is known as "RoHS-5" or "5 of 6" compliant.

Plastic encapsulated components are RoHS compliant when ordered with Pb-free lead terminations. RoHS compliant SMT components conform to IPC/JEDEC J-STD-020C for lead-free reflow temperatures. RoHS compliant components conform to both lead-free (forward) and non-lead free (backward) solder processes, except for BGA package styles.

RoHS Banned Substances	Threshold, Homogeneous Level (1)
RoHS – Cadmium/Cadmium Compounds	JIG threshold = 75 ppm, Not intentionally added RoHS threshold = 100ppm
RoHS – Hexavalent Chromium/Hex. Chromium Compounds	1000 ppm, Not intentionally added
RoHS – Lead/Lead Compounds	1000 ppm, Not intentionally added
RoHS – Mercury/Mercury Compounds	1000 ppm, Not intentionally added
RoHS – Polybrominated Biphenyls (PBBs)	1000 ppm, Not intentionally added
RoHS – Polybrominated Diphenyl Ethers (PBDEs)	1000 ppm, Not intentionally added

(1) Threshold does not apply to applications covered by a RoHS substance exemption.

Regarding the EU Directive 2004/12/EC concerning Packaging and Packaging Waste, Intersil's packing materials (boxes, trays, etc) comply with the directive's requirement that the total concentration of the 4 heavy metals (cadmium, hexavalent chromium, lead and mercury) must not exceed 100 ppm. Material analysis details for RoHS substances for Intersil's packing material are available at www.intersil.com/pb-free.

SUBSTANCES OF CONCERN:

Intersil components do not intentionally contain Asbestos, AZO compounds, Beryllium Oxide, Carbon Tetrachloride, Chlorinated Paraffins, Formaldehyde, Halon, Halogen, Organic Tin Compounds (Tributyl Tin (TBT) & Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)), Ozone depleting substances, Phthalates, Polybrominated Biphenyl Ethers (PBBE), Polychlorinated Biphenyl (PCB), Polychlorinated Naphthalenes (>3 Chlorine atoms), Polychlorinated Terphenyls (PCTs), PVC (shipping tubes only), Radioactive substances, Selenium, 1-1-1 Trichloroethane, and do not have external termination finishes of Pure Lead or Pure Zinc.

SUBSTANCES USED TO MANUFACTURE ALL INTERSIL COMPONENTS:

Alumina: Ceramic, CAS#1344-28-1 **Aluminum:** Bond wire, CAS# 7429-90-5 **Antimony Trioxide:** Used in standard and all PDIP packaged components as a flame retardant in mold compound, CAS# 1309-64-4 **Bismuth:** External termination finish, CAS# 7440-69-9 **Bromine:** Used in standard components, all PDIP packaged components as a flame retardant in mold compound and as compound of the BT laminate for all BGA packaged components, CAS# 7726-95-6 **Chromium:** Lead frame, CAS# 7440-47-3 **Cobalt:** Lead frame, CAS# 7440-48-4 **Copper:** Lead frame / Laminate / External termination finish, CAS# 7440-50-8 **Epoxy Resins:** Mold Compounds / Laminates, CAS# various **Gold:** Bond Wire / Laminate / External termination finish, CAS# 7440-57-5 **Iron:** Lead frame, CAS# 7439-89-6 **Lead:** Used in standard components' external Terminal Finish, and in the internal die attach / lead boron-silicate sealant glass (hermetic package styles only) CAS# 7439-92-1 **Magnesium:** Lead frame CAS# 7439-95-4 **Matte Tin:** External termination finish, CAS# 7440-31-5 **Nickel:** Lead frame / Laminate / External termination finish, CAS# 7440-02-0 **Palladium:** External termination finish, CAS 7440-05-3 **Phosphorus (organic):** Lead frame, CAS# 7723-14-0 **Poly Vinyl Chloride (PVC):** Shipping tubes, CAS# 9002-86-2 **Resins:** Die Attach, CAS# 9003-35-4 **Silica:** Filler, CAS# various **Silicon:** IC Chip / Sealant glass / Bond wire / Lead frame. CAS# 7440-21-3 **Silver:** Die Attach / Epoxy / Spot Plate / External termination finish, CAS# 7440-22-4 **Tin:** External termination finish / Lead frame, CAS# 7440-31-5 **Zinc:** Lead frame / sealant glass, CAS# 7440-66-6 **Zirconium:** sealant glass, CAS# 7440-67-7

Intersil bases its material content knowledge information provided by third parties and has taken and continues to take commercially reasonable efforts to provide representative and accurate information but may not have conducted destructive testing or chemical analysis on incoming materials and chemicals. Intersil and Intersil suppliers consider certain limited information to be proprietary, and thus CAS numbers and other limited information may not be available for release. Intersil's standard warranty and limitation of liability provisions of Intersil's Standard Terms and Conditions of Sale apply to the representation herein unless otherwise provided by a written contract or other agreement signed by the parties.

Douglas A. Balog
Assistant Secretary

Wayne Bishop
Director of Quality and Reliability



Pb-Free: Intersil defines "Pb-Free" or "RoHS Compliant" to mean semiconductor components that are compliant with the current RoHS requirements for all 6 substances, including the requirements that lead not exceed 0.1% by weight in homogeneous material unless exempt.

Green: Intersil defines "Green" to mean Pb-Free / RoHS Compliant and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br and Sb do not exceed 0.1% by weight in homogeneous material). All Intersil designated "Pb-Free" or "RoHS Compliant" components conform to Green initiatives except for PDIP and BGA packaged components.

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