Revision 1.2.0
ADV Issue Date: 01/18/2019
Rev 1.2.0 Issue Date: 04/03/2020

CUSTOMER ADVISORY

ADV1828

Readiness Plan: EU RoHS Exemption 15 Scope Change

This is not a new ADV issuance. This is an update to ADV1828; please see the revision history table for information specific to this update

Change Description:

Intel® is notifying customers of the readiness plan addressing the EU Restriction of Hazardous Substances (RoHS) Directive Exemption 15 scope change.

Exemption 15 scope for electronic products originally covered:

> Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages

Upon revision, the scope of Exemption 15a will only cover:

> Lead in solders to complete a viable electrical connection between the semiconductor die and carrier within integrated circuit flip chip packages where at least one of the following criteria applies:
> - a semiconductor technology node of 90 nm or larger;
> - a single die of 300 mm^2 or larger in any semiconductor technology node;
> - stacked die packages with die of 300 mm^2 or larger, or silicon interposers of 300 mm^2 or larger.

Changes will affect Field Programmable Grid Array (FPGA) Flip Chip products that currently use leaded solder bumps on the 1st level interconnect.

- Selected products will be converted to the leadfree SnAg1.8 solder bumps, replacing the 63/37 Sn-Pb bumps.
- There will also be a selected set of products that will not transition to leadfree solder bumps and will eventually be discontinued.

See Table 1 for the conversion plan and Table 2 for important information about the converted products.

Table 1: Leadfree Solder Bumps Conversion Plan

Conversion Timeline	**Converting in 2019** ***Immediately impacted with latest Ex15 scope change***	**Converting in 2020** ***Applicable Ex15a extension to year 2021***	**Converting in 2021** ***Applicable Ex15a extension to year 2021***
Product Family	• Arria® II GX • Arria® V (small die) • Stratix® III (small die) • Stratix® IV (small die)	• Arria® II GZ • Arria® V (large die) • Stratix® III (large die) • Stratix® IV (large die) • Stratix® V	• Stratix® II & Stratix® II GX* • Arria® GX*
Samples and Production Timeline	In production	Converted samples can be ordered now	Samples availability date to be advised

Note:

1. Small die is < 300mm^2; Large die is $\geq$ 300mm^2
2. The following products are **not converting**: HardCopy II, HardCopy III, HardCopy IV, HardCopy Si Pro

Table 2: Important Information About the Converted Products

Ordering Code	New Ordering Part Numbers (OPNs) with the "G" suffix will be assigned to converted products. Existing OPNs with leaded solder bumps will eventually be retired and a separate Product Discontinuation Notice (PDN) will be issued to officially notify customers.
Quality and Reliability Qualification Status	Package reliability qualification testing has been successfully completed except Arria® GX, Stratix® II & Stratix® II GX.

Table 2 (continued): Important Information About the Converted Products

Assembly Site	The assembly sites are the same: ASE Taiwan and Amkor Korea.
Bill of Materials	The 63/37 Sn-Pb leaded bumps will be replaced with leadfree SnAg1.8 bumps. The leadfree solder bumps necessitated changes to other materials within the BOM (Bill of Materials) to meet manufacturability and package reliability requirements.
Package Form and Fit	There will be modifications to the package form and fit for the following product families: Stratix® III & Arria® II GX (lidless package). Applicable Package Outline Drawings (POD) for the converted products are available upon request.
Function and Electrical Specification	The change does not impact the function and electrical specifications of the affected products.

Recommended Action:

It is recommended for customers to switch to the fully lead-free converted products (with the "G" suffix). Please see the link provided in the "Products Affected" section where the new OPNs of the converted parts are listed.

Products Affected:

The link below contains the list of affected OPNs with the corresponding conversion status and new OPN (where applicable).

https://www.intel.com/content/dam/www/programmable/us/en/pdfs/literature/pcn/adv1828-opn-list.xlsx

Reason for Change:

This change is in preparation for the RoHS Directive Exemption 15 scope change. This change also aligns with Intel's long-standing commitment to preserving the environment, health, and safety.

Contact

For more information, please contact your Sales representative or submit a Service Request at the My Intel support page.

Revision History

Date	Rev	Description
01/18/2019	1.0.0	Initial Release
09/06/2019	1.1.0	• Update Exemption Status from EX15a to Expired for the following OPNs: HC4E25FF780NAA, HC4E25FF780NAB, HC4E25FF780NAC, HC4E25FF780NAE, HC4E35FF1152NAL, HC4E35FF1152NAM, HC4E35FF1152NAW, HC4E35FF1152NAX, HC4E35FF1517NAR, HC4E35LF1152NAH, HC4E35LF1152NAQ, HC4E35LF1152NAS, HC4E35LF1152NAV, HC4E35LF1152NAY • Remove the following OPNs: HC210WF484NAB, HC210WF484NAD, HC210WF484NAJ
04/03/2020	1.2.0	• Updated status of affected part list • Updated Table 1: Arria® GX, Stratix® II & Stratix® II GX samples availability to be advised. • Updated Table 2: Package reliability qualification testing completed except for Arria® GX, Stratix® II & Stratix® II GX