



Premstaetten, 05 May 2019

Product Change Notification PCN 13-2019

- Additional source bumping supplier (Pactech Asia_Malaysia)
- Exchange of cyanide zincation to cyanide free-zincation chemistry

Dear Customer,

In order to reasonably protect the supply of your product

material ID	product description	product
191730019	TSL2584TSVM CSP LF T&R	TSL2584TSVM CSP
191730027	TSL2584TSV CSP LF T&R	
191730029	TSL2584TSVS CSP LF T&R	

and to ensure additional flexibility and capacity to further improve responsiveness and on time delivery to our customers, ams AG is currently qualifying 2nd source supplier for our TSV bumping process to Pactech Asia located in Malaysia.

This will enable us to better support the ever-increasing demand in today's dynamic market environment and to have an alternative and ready solution for possible capacity bottlenecks, allocation situations and any other manufacturing issues that may arise and potentially prevent ams AG from meeting our customer's demands on time.

In addition, to make process / package more robust we also plan to have process change for pre-treatment chemistry from **cyanide zincation** to **cyanide free zincation** on all ams AG TSV product for bumping at Pactech.

As a benefit, the zincation step is in future cyanide free. This process change will help to substitute a dangerous part of the chemical to non-dangerous chemical. With this it will also help to achieve smoother pad surfaces after Ni/Au or Ni/Pd/Au plating.



The cyanide free zincation was introduced by Pactech in 2016 and fully qualified by ams on other ams products.

Process Flow Matrix:

	Current Supply Chain	Additional Supply Chain
Wafer Fabrication	ams Fab B	ams Fab B
TSV bumping	Pactech Germany	Pactech Germany New Supplier - Pactech Asia (Malaysia)
Sawing & Packing	ams (Austria & Philippines)	ams (Austria & Philippines)

Qualification results will be provided upon request.

Impact on Product

No impact as there will be no change in terms of form, fit, function and reliability of the device.

Product Traceability

New recipe will be recorded at Pactech system on each ams product that will be fully released and implemented in production.

Target Date of qualification: end Q3 2019



Target Date of Implementation: Q4 2019 or upon customer approval.

Upon customer approval, ams AG will define a cut-off period.

Please be advised that unless we received your written refusal concerning this PCN in writing within 30 days, the PCN shall be deemed accepted.

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

Best Regards,

A handwritten signature in black ink, appearing to read 'Herwig Klimesch'.

Herwig Klimesch

ams AG

VP of Quality and Environment