209.	1-vinylimidazole	NO	214-012-0, 1072-63-5	25/06/2020	(Article 57c)	D(2020)4578-DC	Toxic for reproduction
210.	Bis(2-(2-methoxyethoxy)ethyl) ether	NO	205-594-7, 143-24-8	19/01/2021	Toxic for reproduction (Article 57C)	D(2020)9139-DC	Toxic for reproduction
211.	Dioctyltin dilaurate, stannane, dioctyl-, bis(coco acyloxy) derivs., and any other stannane, dioctyl-, bis(fatty acyloxy) derivs. wherein C12 is the predominant carbon number of the fatty acyloxy moiety	NO	293-901-5, 91648-39-4, 222-883-3, 3648-18-8	19/01/2021	Toxic for reproduction (Article 57C)	D(2020)9139-DC	Toxic for reproduction

Key:

In Product more 0.1%	In Product less 0.1%	Plating - No Residuals	Cleaning – No Residuals	Testing Purposes only - No Residuals

Health & Safety Department

REACh, SVHC's & Articles
Cadmium Plating Evaluation

Sample	Part No.	Bin ref	Trace No.	Weight before plating	Weight after Electroless nickel	Weight of Electroless nickel %	Weight after Cadmium plating	Weight of Cadmium %
1	G79502-08	BH492	1416269	4.0133 g	4.0791g	1.6	4.2039g	3.0
2	G79502-14	BH399	1890378	8.1389 g	8.2783g	1.7	8.5201g	2.8
3	G79502-18	BH406	1389232	10.9914 g	11.1806g	1.7	11.4342g	2.2
4	G79502-22	BH428	1107117	14.6128 g	14.8356g	1.5	15.2035g	2.4
5	G79502-61	BH402	646287	15.6952 g	15.9557g	1.6	16.3067g	2.2

The samples taken will have an element of electroless nickel applied.

Summary

Under REACh and in particular SVHC's the maximum permissible amount of Cadmium (by weight) is 0.1% is acceptable

The samples used are a reasonable assumption of the weight effects of cadmium on Glenair componentry.

We do not need to stop using Cadmium, but we do need to make customers who wish to have Cadmium plated parts aware of the fact that the use of this substance is beyond the permissible level of 0.1%.

The risk assessment and advice on the next page provides safe user information.

Health and Safety Guidance for Components with Suspected Cadmium Corrosion

Cadmium has long been used for its unmatched ability to help reduce corrosion on both metal and plastic components whilst improving electrical continuity. However, the use of cadmium is gradually reducing driven by various streams of regulation and restriction, RoHS & REACH is typical today. The cadmium-plated surface on components does not represent a risk to health. Cadmium works by corroding preferentially to the component it is protecting. When it corrodes it forms a white cadmium salt, which can represent a risk to health if not handled correctly. It is essential that these corrosion products are not inhaled or ingested and that good hygiene measures are used.

Identification of Cadmium corrosion
Cadmium plated components that have been passivated are a golden colour. When they begin to corrode a white bloom spreads on the surface, a white crystalline solid then becomes evident (as if salt water has dried on the surface), followed by pitting of the surface, which may be darker in colour.

Routes of entry into the body
Generally the white crystalline deposits are unlikely to become airborne and so cannot be inhaled. However, occasionally there are cases of gross corrosion where the corrosion flakes off the component. In these cases small quantities of dust may become airborne, e.g. when being removed from any packaging.
In all circumstances, dry mechanical abrasion must be avoided, as this will generate respirable dust. The most likely route of entry is therefore ingestion from touching the corrosion on the component or corrosion that has dropped off the component which could then be ingested through eating, drinking or smoking. Again, good hygiene practice should follow.

If you see these signs then you should take precautionary personal protection measures by using:

- Disposable gloves.
- Wear a disposable dust mask, Filtering Face mask
- Open any packaging carefully and identify the levels of corrosion.

If corrosion is evident, seek advice from Occupational Health.

- Remove the disposable gloves by grasping at the wrist, turning inside out and dispose of in the hazardous waste stream with the mask.
- Wash hands well with soap and warm water.
- If the component needs to be removed from its packaging, place in a clear plastic bag and seal it to prevent debris loss.
- Dispose of contaminated products as if it is hazardous waste.

Cadmium Health effects
The most serious acute effect of cadmium is confined to the lungs and is typically associated with metal fume from welding plated metals.
Chronic effects target lungs, respiratory system, kidneys, prostate and blood (from inhalation and ingestion).
The most serious consequence of chronic cadmium poisoning is cancer (lung and prostate). Chronic effects generally result in kidney damage. Cadmium also is believed to cause pulmonary emphysema and bone disease (osteomalcia and osteoporosis).

The effects of cadmium are serious and long lasting as it is difficult for the body to excrete once inside (it has a very long biological half-life of 25 years).