Explanatory note to a review report

Legal name of authorisation holder(s):	*Rolls-Royce plc*
Authorisation number:	*REACH/14/1/0*
Submitted by:	*Rolls-Royce plc*
Substance:	*Bis(2-ethylhexyl) phthalate (DEHP)* *EC: 204-211-0 CAS: 117-81-7*
Use title:	*The processing of a stop-off formulation containing DEHP during the diffusion bonding and manufacture of aero engine fan blades.*
Use number:	*1*
Date	*21 August 2020*

1. The scope of the use

Not applicable.
The scope of use has not changed since the original application for authorisation.

2. Chemical Safety Report (CSR)

Not applicable.
There has been no change to the Chemical Safety Report.
The exposure scenarios and volume of material used as described in the original application for Authorisation still apply.

3. Analysis of Alternatives (AoA)

Since the original application for Authorisation made in 2013, Rolls-Royce has continued to work on the validation of an alternative to the Morgan Advanced Materials DEHP-containing formulation; Stopyt 62A.

The most relevant changes to the previous AoA are described below:

The 2 most viable potential alternatives identified in the original application for Authorisation have since been discounted on grounds of Technical Feasability. Please see the AoA Section 6.7 for full details on the alterative Stop-flo No2, and Section 6.13 for details on the alternative Stopyt-62G.

Water based stop-off materials have been assessed and discounted due to technical feasibility, however Rolls-Royce is continuing to monitor progress and technical developments in this area in collaboration with the Rolls-Royce Hucknall site. Please see the AoA Section 6.1 for information on the assessment of this class of formulations as a potential alternative.

Since the previous Authorisation was submitted, a new DEHP-free formulation has been developed in consultation with Morgan Advanced Materials - Stopyt-62PL. This formulation has been identified as the most suitable substitution candidate to Stopyt-62A and has passed initial validation testing. Please the AoA Section 6.19 for details of the development and testing progress to date for this promising new alternative that we are working on.

A Substitution plan including timeline has been created to progress the technical validation work being carried out on Stopyt-62PL. The substitution plan has been submitted as part of this Review Report.

The substitution of the DEHP-containing formulation is anticipated to be completed before the current Authorisation expires *if* the remaining testing is successful. We are submitting this

review report in case the final testing fails and we need to start further work to develop and test additional alternatives, which we anticipate will require a further 5-7 years work.

4. Socio-economic Analysis (SEA)

The SEA has been reviewed and updated to reflect the manufacturing source options that the Company would have to develop, should the Authorisation not be granted. The document also summarises the trials undertaken to validate an alternative material to DEHP in this formulation and the continuing programme. In addition it confirms that the exposure controls implemented have been maintained across the manufacturing and associated operations.

Section 1 contains the updated summary and reviews the manufacturing source options available as Singapore and the USA.

Section 2 updates the market and business positon with the most recent full year (2019) data, which is further quantified in Sections 3 and 4.