Exemption Request Form

Date of submission:

1. Name and contact Details:

1) **Name and contact details of applicant:**

Company:	3M	**Telephone:**	651-736-2768
Name:	John Van Derlofske Ph. D.	**E-mail:**	jvanderlofske@mmm.com
Function:	Senior Scientist	**Address:**	St. Paul, MN, 55144, USA

2) **Name and contact details of responsible person for this application (if different from above):**

Company:		**Telephone:**	
Name:		**E-mail:**	
Function:		**Address:**	

2. Reason for application

Please indicate where relevant:	
Request for new exemption in:	**Yes**
Request for amendment of existing exemption in:	**-**
Request for extension of existing exemption in:	**-**
Request for deletion of existing exemption in:	**-**
Provision of information referring to an existing specific exemption in: ○ Annex III ○ Annex IV	**No**
No. of exemption in Annex III or IV where applicable:	**-**
Proposed or existing wording:	**-**
Duration where applicable:	**Minimum 5 years**
Other:	**-**

3. Summary of the exemption request / revocation request

See separate dossier

4. Technical description of the exemption request / revocation request

(A) Description of the concerned application:

1. To which EEE is the exemption request/information relevant?

Name of applications or products:	**See separate dossier**

a. List of relevant categories: (mark more than one where applicable):

1	**Yes**	7	**Yes**
2	**Yes**	8	**Yes**
3	**Yes**	9	**Yes**
4	**Yes**	10	**Yes**
5	**Yes**	11	**Yes**
6	**Yes**		

b. Please specify if application is in use in other categories to which the exemption request does not refer: Color displays are used in a wide variety of products so this application could potentially be utilized in any category.

c. Please specify for equipment of category 8 and 9:

The requested exemption will be applied in:	
• monitoring and control instruments in industry	**Yes**
• in-vitro diagnostics	**Yes**
• other medical devices or other monitoring and control instruments than those in industry	**Yes**
2. Which of the six substances is in use in the	**Cd only**

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application/product? (Indicate more than one where applicable)		
3. Function of the substance	**Accurate color control - See separate dossier for more details.**	
4. Content of substance in homogeneous material (% weight):	**3 – 5 µg/cm2 typical, maximum 20 µg/cm2. Thickness nominally = 200um: So concentration is 160-260 ppm of cadmium typical, maximum 1000 ppm (0.1%). Please refer to section 3.3 of separate dossier for details.**	
5. Amount of substance entering the EU market annually through application for which the exemption is requested:	**Up to 174 kg per year.**	
Please supply information and calculations to support stated figure	**Please see separate dossier for details of calculation.**	
6. Name of material/component:	**Particles of encapsulated cadmium which are dispersed in an optically transparent media.**	
7. Environmental Assessment:		
A.) LCA – Life Cycle Assessment	**Yes**	**– partial comparative only – see dossier**
	No	
B) In which material and/or component is the RoHS-regulated substance used, for which you request the exemption or its revocation? What is the function of this material or component?	**See separate dossier for detailed description.**	
C) What are the particular characteristics and functions of the RoHS-regulated substance that require its use in this material or component?	**See separate dossier for detailed description.**	
5. Information on Possible preparation for reuse or recycling of waste from EEE and on provisions for appropriate treatment of waste		
1) Please indicate if a closed loop system exist for EEE waste of application exists and provide information of its characteristics (method of collection to ensure closed loop, method of treatment, etc.)	-	

2) Please indicate where relevant:
• Article is collected and sent without dismantling for recycling
• Article is collected and completely refurbished for reuse
• Article is collected and dismantled:
  ○ The following parts are refurbished for use as spare parts:
  ○ The following parts are subsequently recycled:
• Article cannot be recycled and is therefore:
  ○ Sent for energy return
  ○ Land filled
	The principal envisaged final uses are in televisions, mobile phones, monitors, tablet PCs, etc. These are in scope of the WEEE directive so should be collected and sent to professional recyclers. Recycling process used varies. Some WEEE will be shredded, materials separated by physical methods (i.e. based on density) and materials recovered by smelting (metals) or other processes. Some recyclers dismantle then recycle materials in separate waste streams. Refurbishment of some products is carried out, e.g. computers and mobile phones. Parts reuse is unlikely.	

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3) Please provide information concerning the amount (weight) of RoHS substance present in EEE waste accumulates per annum: • In articles which are refurbished • In articles which are recycled • In articles which are sent for energy return • In articles which are land filled	**The proportions that will be in refurbished, recycled, sent for energy return and land filled will be the same as for all WEEE in the EU because products using this technology will be treated in the same way as all other WEEE. See separate dossier for detailed description.**
6. Analysis of possible alternative substances	
A) Please provide information if possible alternative applications or alternatives for use of RoHS substances in application exist. Please elaborate analysis on a life-cycle basis, including where available information about independent research, peer-review studies development activities undertaken	**See separate dossier for detailed description.**
B) Please provide information and data to establish reliability of possible substitutes of application and of RoHS materials in application	**See separate dossier for detailed description.**
7. Proposed actions to develop possible substitutes	
A) Please provide information if actions have been taken to develop further possible alternatives for the application or alternatives for RoHS substances in the application.	**See separate dossier for detailed description.**
B) Please elaborate what stages are necessary for establishment of possible substitute and respective timeframe needed for completion of such stages.	**See separate dossier for detailed description.**
8. Justification according to Article 5(1)(a):	
A) Links to REACH: (substance + substitute)	
1) Do any of the following provisions apply to the application described under(A) and (C)?	**Cadmium is subject to several provisions of REACH. Registration, however, is not relevant in the context of this application.**
• Authorization	**No**
• SVHC	**No**
• Candidate list	**No**
• Proposal inclusion Annex XIV	**No**
• Annex XIV	**No**
• Restriction:	**i.) The cadmium concentration in "plastic material" of articles is <0.01%. The plastic material consists of the light guide, QD Film, & three filters. (Note that the REACH Annex XVII concentration limit, which is in "plastic materials", is different from the more stringent RoHS limit which is in homogeneous materials). For more details see separate dossier.**
	ii.) The cadmium QD is first incorporated into an amino silicone polymeric material. This amino silicone polymeric material is not a listed polymer type in Annex XVII item 23, so this

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	REACH restriction is not applicable. For more details see separate dossier	
	iii.) The item 23 restriction of 1907/2006 is only for pigments and stabilizers. (comment : This RoHS 2 language refers to the old restriction – the new updated restriction doesn't mention the words 'pigments and stabilizers') The cadmium QD material is not a pigment or a stabilizer.	
• Annex XVII	**See above**	
• Registry of intentions	**Cadmium and certain cadmium compounds are proposed as an SVHC but not cadmium selenide. There is an intention to broaden range of plastic materials in which cadmium is restricted but no change in the maximum concentration limit.**	
• Registration	**Not applicable**	
2) Provide REACH-relevant information received through the supply chain.		
(B) Elimination/substitution:		
1. Can the substance named under 4.(A)1 be eliminated?	Yes - Consequences?	-
	No - Justification:	**- See separate dossier for detailed description.**
2. Can the substance named under 4.(A)1 be substituted?	Yes • Design changes: • Other materials: • Other substance:	-
	No - Justification:	**- See separate dossier for detailed description.**
3. Give details on the reliability of substitutes (technical data + information):	**See separate dossier for detailed description.**	
4. Describe environmental assessment of substance from 4.(A)1 and possible substitutes with regard to: 1) Environmental impacts: 2) Health impacts: 3) Consumer safety impacts: Do impacts of substitution outweigh benefits thereof?	**See separate dossier for detailed description.**	
5. Please provide third-party verified assessment on this:	**See ERA's accompanying assessment.**	
(C) Availability of substitutes:		
a) Describe supply sources for substitutes: b) Have you encountered problems with the	**See separate request dossier.**	

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availability? Describe: c) Do you consider the price of the substitute to be a problem for the availability? Yes No d) What conditions need to be fulfilled to ensure the availability?	
(D) Socio-economic impact of substitution:	
What kind of economic effects do you consider related to substitution? Increase in direct production costs Increase in fixed costs Increase in overhead Possible social impacts within the EU Possible social impacts external to the EU Other: ・ Provide sufficient evidence (third-party verified) to support your statement:	**None applicable**
9. Other relevant information	
Please provide additional relevant information to further establish the necessity of your request:	**None**
10. Information that should be regarded as proprietary	
Please state clearly whether any of the above information should be regarded to as proprietary information. If so, please provide verifiable justification:	**All the documents submitted may be published.**