

<b>Application Development Center EMS-GRIVORY</b> <b>Answer to Technical Inquiry No.: 2020-0972</b>		
Author:	Pierre Heidhoff	Date: 11/30/2020
To:	Akiba Masayoshi	
Company:	Hitachi Chemical Automotive Products (Thailand) Co., Ltd.	
Country:	Thailand (TH)	
Material:	Grilamid TR XE 4139 black 9231	
Application:	Interior Trim Piano black	

**Problem Description / Target of the Customer:**

Please send me the result of weathering test of Grilamid TR XE 4139 black 9231.

**Result / Solution / Proposal:**

Available test results / data has been shared with Akiba san (Toyota and VW standard, as attached in this TI).

We have opened one more TI to make tests acc. to customers requirements (datacollection, TI 2020-1024S).

## AGEING BY XENON ARC

Device	: Weatherometer ci35	BA.Nr	: 141004
Standard	: Toyota Method E	Date	: August 2016
Irridiation	: 0.55 W/m <sup>2</sup> @ 340nm	ECJP	2016-0285
BST	: 89°C ± 3°C		
rel. Humidity	: 50% ± 5%		

### A) Grilamid TR XE 4139 black 9231

#### Colour difference (CIE - L\* a\* b\*)

	<b>dE *</b>	<b>dL</b>	<b>da</b>	<b>db</b>
800kJ/m <sup>2</sup>	1.9	1.6	0.8	-0.5

#### Grey scale

#### Gloss 60°

Original	5	103
800kJ/m <sup>2</sup>	4-5	99

				Gloss 60°	Grey scale	dE	dL	da	db
Sample Plate 80 x 100 x 2 mm	PAP	Time [h]	Bemerkung						
Grilamid TR XE 4139 black 9231	76-67932/11	100	PV3929	103.0	5	0.3	0.0	-0.3	-0.1
Grilamid TR XE 4139 black 9231	76-67932/11	250	PV3929	103.0	5	0.4	0.1	-0.3	0.1
Grilamid TR XE 4139 black 9231	76-67932/11	500	PV3929	103.0	5	0.4	0.0	0.4	-0.1
Grilamid TR XE 4139 black 9231	76-67932/11	1000	PV3929	103.0	5	0.5	0.2	-0.4	-0.3
Grilamid TR XE 4139 black 9231	76-67932/11	1600	PV3929	103.0	5	0.9	0.5	-0.8	-0.2