



## Risk Assessment Report on Hazardous Substances under EU REACH

Product Name: Hybrid Stepping Motor & DC Brushless Motor

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Type / model FL51BL39-12V-2483A-01

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Company Name: CHANGZHOU FULLING MOTOR CO., LTD.

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Assign Date: 2019-05-15

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Report Date: 2019-06-10

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Update Date: 2019-12-02

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Report update history:

- R1: 2019.12.02 Update report based on regulatory updates.



## Section I: Basic Information

### 1 Applicant Basic Information

**Company Name:** CHANGZHOU FULLING MOTOR CO., LTD.

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### 2 Component Basic Information

**Product Name:** Hybrid Stepping Motor & DC Brushless Motor

**Type / model:** FL51BL39-12V-2483A-01



### 3 Assessment Result

Content	Result
EU REACH Regulation-201 SVHC	PASS
EU REACH Regulation- Annex XVII (70 Entries)	PASS
SVHC Intentions	PASS
Restriction Intentions	PASS

Audited by:

Amanda Lau



Approved by:

Charles



## Report Illustration

Risk Assessment Report on Hazardous Substance under EU REACH for Products (hereby refers to as “This Report”), is intended to help product supply chain understand the risk of hazardous substances (under EU REACH) which could be contained in components and materials, it also provides testing suggestion for high risk materials in order to achieve EU REACH compliance in a comparatively economical way.

The assessment will both check the existence and analyze the possibility of hazardous substances under EU REACH and it is mainly based on IMDS data sheets provided by the applicant, Product BOMs and REACH, RoHS testing reports are also supporting materials. The assessment process consists of two parts: I. Inspection on declared substances in IMDS sheet: Import product data into HENZ system (Hazardous substances free information system) to find if any declared substance in IMDS sheet is REACH regulated one by means of CAS matching; II. Assessment on declared materials in IMDS sheets: Using SVHC Risk Assessment Matrix to find out risk materials which have a big possibility containing REACH regulated substances. And then relevant lab testing is recommended to make sure the presence and the actual content of those suspect regulated substances. REACH [regulation (EC) No 1907/2006] regulated substances consist of REACH-SVHC (substances of very high concern), REACH Annex XVII – Restrictions, and substance intentions which would be the next batch of SVHC or Restriction. Please find more in Section II.

This report is only used for compliance & risk assessment of hazardous substances under EU REACH for product supply chain. It shall be renewed or reassessed if the formula/materials of product changed or the related regulation updated.

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## Disclaimer

This report shall be used as guidance document, it only focuses on the assessment of the risk of hazardous substances that may be contained in materials, we do not check the integrity, authenticity and validity of the information provided (such as IMDS data sheets). Applicants shall ensure that the information they provided can fully represent the products they supplied, both the product structure and material description are accurately and clearly indicated, the IMDS data sheet is real and the source is reliable.

The more complete and accurate of the IMDS data sheet, the higher accurate of this assessment report.



## Section II: Regulation and Requirements

The assessment involves following hazardous substances lists under EU REACH

Regulation (EC) No 1907/2006:

Hazardous Substance List	Version	Regulation Requirements
REACH- SVHC	201	<p>SVHC is one group of substances regulated under EU REACH. The requirements for SVHC in article are as follows:</p> <ul style="list-style-type: none"> <li>➤ producers or importers of articles have to notify ECHA if their article contains an SVHC in quantities totalling over one tonne per producer or importer per year and if the substance is present in those articles above a concentration of 0.1% (w/w);</li> <li>➤ suppliers of articles which contain an SVHC in a concentration above 0.1% (weight by weight) have shall communication enough information in the supply chain.</li> </ul> <p>Find more explanation about SVHC in following link(only available in Chinese):</p> <p><a href="https://cn.ecbos.com/insights/list-129.html">https://cn.ecbos.com/insights/list-129.html</a></p>
REACH Annex XVII – Restrictions	70 Entries (Entry No.73)	<p>Restrictions are a series of entries for restricted substances under EU REACH. It would apply to substance itself, substance in mixture or substance in articles. The use of restricted substances under REACH shall meet the relevant requirement from Annex XVII.</p> <p><a href="https://cn.ecbos.com/insights/list-83.html">https://cn.ecbos.com/insights/list-83.html</a></p>
SVHC Intentions		<p>SVHC Intentions is the Registry of Intentions (RoI) for substance of very high concern (SVHC) which is suggested to be added into the SVHC list. These substances are not SVHC at the moment, but applicants should pay attentions to find alternatives as soon as possible.</p> <p><a href="https://echa.europa.eu/registry-of-svhc-intentions">https://echa.europa.eu/registry-of-svhc-intentions</a></p>
Restriction Intentions		<p>Restriction Intentions is the Registry of Intentions (RoI) for restriction dossier which is suggested to be added into Annex XVII. These substances are not restricted at the moment, but applicants should pay attentions to find alternatives as soon as possible.</p> <p><a href="https://echa.europa.eu/registry-of-restriction-intentions">https://echa.europa.eu/registry-of-restriction-intentions</a></p>

### Section III: Risk assessment and results

#### 4 Assessment on declared substances in MDS

Assessment on declared substances in MDS is a CAS matching process between IMDS data sheet and substances list of REACH-SVHC and substances from Product-related Restriction entries in REACH Annex XVII, SVHC intentions and Restriction intentions. If any REACH-SVHC or substances from Product-related Restriction entries in REACH Annex XVII, SVHC intentions and Restriction intentions is found above 0.1% w/w or above its special concentration limit, it would be listed as follows:

Component Name	Component No.	Material Name	Material No.	Material Weight(g)	Substance Name	CAS	Conc. %	Risk cat.*	Result
				None				S	PASS
				None				R	PASS
				None				SI	PASS
				None				RI	PASS
<b>Notice:</b> *Risk cat.: S= SVHC; R= Restriction; SI= SVHC Intentions; RI=Restriction Intentions.									

#### 5 Assessment on high risk materials

Assessment on high risk materials means screening out materials that have a big possibility containing hazardous substances but not declared in IMDS datasheet by using CIRS risk material assessment matrix, the matrix is made from both theoretical data and practical experience. The found high risk materials are listed as follows.



Component Name	Component No.	Material Name	Material No.	Material Weight(g)	Possible hazardous substances	Risk cat.*	Result
End cover	1.1.02.EB511-500	ADC12	FL51BL39-12V-2483A		Lead	<b>S</b>	<b>PASS<sup>1</sup></b>
Connector	1.2.10.000676	MOLEX 510040500	MOLEX 510040500		Brominated flame retardants	<b>S, R</b>	<b>PASS<sup>2</sup></b>
Connector pin	1.2.10.000677	MOLEX 500118000	MOLEX 500118000		Lead	<b>S</b>	<b>PASS<sup>2</sup></b>
Connector	1.2.10.000678	AMP C-928247-3	AMP C-928247-3 (928247-3)		Brominated flame retardants	<b>S, R</b>	<b>PASS<sup>3</sup></b>
Connector pin	1.2.10.000720	AMP 926973-1	AMP 926973-1		Lead	<b>S</b>	<b>PASS<sup>4</sup></b>
Stator housing	1.1.06.EB513-500	ADC12	FL51BL39-12V-2483A		Lead	<b>S</b>	<b>PASS<sup>5</sup></b>
High temperature lead wire (Jacket)	1.2.02.133280	FEP	UL1332AWG16 yellow		Phthalates plasticizer Lead compounds Cadmium compounds SCCP Brominated flame retardants	<b>S, R, SI<sup>#</sup></b>	<b>PASS<sup>6</sup></b>
High temperature lead wire (Jacket)	1.2.02.133282	FEP	UL1332AWG16 Black		Phthalates plasticizer Lead compounds Cadmium compounds	<b>S, R, SI<sup>#</sup></b>	<b>PASS<sup>6</sup></b>



Component Name	Component No.	Material Name	Material No.	Material Weight(g)	Possible hazardous substances	Risk cat.*	Result
					SCCP Brominated flame retardants		
High temperature lead wire (Jacket)	1.2.02.133284	FEP	UL1332AWG16 Green		Phthalates plasticizer Lead compounds Cadmium compounds SCCP Brominated flame retardants	S, R, SI#	PASS <sup>6</sup>
3M high temperature tape	1.2.16.000015	1350F-1	1350F-1		Phthalates plasticizer Brominated flame retardants	S, R, SI#	PASS <sup>7</sup>
None						RI	PASS

**Notice:**

\*Risk cat.: S= SVHC; R= Restriction; SI= SVHC Intentions; RI=Restriction Intentions.

#On September 3, 2019, ECHA conducted a public consultation on 4 substances to be included in the SVHC list, including a plasticizer diisohexyl phthalate. Enterprises should pay attention to SVHC revisions.

1. According to the EU RoHS test report (Report No: SHA18-242959-01), the concentration of lead in the silvery metal of end cover is tested as below the detection limit, there is no need to conduct any follow-up lab test.
2. According to the Product Compliance Statement provided by Molex, the connector (0510040500) and connector pin (0500118000) are compliant to Directive 2011/65/EU and its subsequent amendments, including the Directive EU 2015/863, all the homogeneous materials of them have less than 0.1% by weight each of lead, mercury, hexavalent chromium, PBB, PBDE, DBP, BBP, DIBP, DEHP, and 0.01% by weight of cadmium. Also they do not contain any SVHC (15 January 2019). There is no need





Component Name	Component No.	Material Name	Material No.	Material Weight(g)	Possible hazardous substances	Risk cat.*	Result
to conduct any follow-up lab test.							
3. According to the Product Compliance Statement provided by TE Connectivity Corporation, the connector 928247-3 is compliant to Directive 2011/65/EU and its subsequent amendments, including the Directive EU 2015/863, all the homogeneous materials of them have less than 0.1% by weight each of lead, mercury, hexavalent chromium, PBB, PBDE, DBP, BBP, DIBP, DEHP, and 0.01% by weight of cadmium. Also it does not contain any SVHC (15 January 2019). There is no need to conduct any follow-up lab test.							
4. According to the Product Compliance Statement provided by TE Connectivity Corporation, the connector pin 926973-1 is compliant to Directive 2011/65/EU and its subsequent amendments, including the Directive EU 2015/863, all the homogeneous materials of them have less than 0.1% by weight each of lead, mercury, hexavalent chromium, PBB, PBDE, DBP, BBP, DIBP, DEHP, and 0.01% by weight of cadmium. Also REACH Candidate Substances of Very High Concern are not contained in the product above the limits per the Definition within REACH (15 January 2019). There is no need to conduct any follow-up lab test.							
5. According to the EU RoHS test report (Report No: SHA18-242959-01), the concentration of lead in the silvery metal of stator is tested as below the detection limit, there is no need to conduct any follow-up lab test.							
6. According to the REACH test report (Report No: TS19051014R1), the concentration of phthalates plasticizer, lead compounds, cadmium compounds, SCCP and brominated flame retardants in the yellow, black and green plastic jacket of lead wire are all tested as below the detection limit, which can meet the requirements of REACH Regulation.							
7. According to the Regulatory Data Sheet provided by 3M, this product, including any article that the product is composed of, does not contain at greater than 0.1% by weight a Substance of Very High Concern (SVHC) substance identified according to Article 59 of REACH. This declaration reflects the substances on the candidate SVHC list, effective January 2019. This product does not exceed the maximum concentration values (MCVs) set under EU Directive 2011/65/EU (RoHS recast/RoHS 2), as stated in Annex II to that directive and its amendment EU 2015/863. There is no need to conduct any follow-up lab test.							



## Section IV Test suggestion

Section III is an assessment on hazardous substances and high risk materials, which is from the theoretical point of view. The actual risk of this component need to be further confirmed by relevant chemical tests. This section provides CIRS's testing recommendation which indicates the risk material and its possible hazardous substance.

### 6 Test suggestion

All materials in this product are of low risk, there is no need to conduct any follow-up lab test.





## Section V: References

- [1] **【IMDS data sheet】** MDSReport\_88732362
- [2] **【BOM data sheet】** FL51BL39-12V-2483A-01
- [3] **【Test Report】** SHA18-242959-01
- [4] **【Declaration】** Molex: 0510040500; 0500118000
- [5] **【Declaration】** TE Connectivity: TE928247-3
- [6] **【Declaration】** TE Connectivity: ENG\_PC\_MD\_926973-1\_E
- [7] **【Test Report】** TS19051014R1
- [8] **【Declaration】** 3M:1350 Regulatory Data Sheet
- [9] **【SDS】** 243: 316211 V001.4
- [10] **【SDS】** K-704B:SDSK704BV002201601N1
- [11] **【Test Report】** SHA19-021458-02