



Test Report

No.: ETR21304559

Date: 22-Mar-2021

Page: 1 of 4

MITSUBISHI GAS CHEMICAL CO., INC. ELECTRONICS MATERIAL DIVISION
5-2, MARUNOUCHI 2-CHOME, CHIYODA-KU, TOKYO 100-8324, JAPAN

The following sample(s) was/were submitted and identified by/on behalf of the applicant as:

Sample Submitted By : MITSUBISHI GAS CHEMICAL CO., INC. ELECTRONICS MATERIAL DIVISION
 Sample Name : COPPER CLAD LAMINATES & PREPREGS
 Style/Item No. : CCL-HL830NS(WITHOUT COPPER FOIL),
 CCL-HL830NS(TYPE-HX)(WITHOUT COPPER FOIL),
 CCL-HL830NS(TYPE-EX)(WITHOUT COPPER FOIL),
 CCL-HL830NS(TYPE-LC)(WITHOUT COPPER FOIL),
 CCL-HL830NS(TYPE-LD)(WITHOUT COPPER FOIL),
 CCL-HL830NS(TYPE-HD)(WITHOUT COPPER FOIL),
 CCL-HL832NS(WITHOUT COPPER FOIL),
 CCL-HL832NS(TYPE-HX)(WITHOUT COPPER FOIL),
 CCL-HL832NS(TYPE-EX)(WITHOUT COPPER FOIL),
 CCL-HL832NS(TYPE-LC)(WITHOUT COPPER FOIL),
 CCL-HL832NS(TYPE-LD)(WITHOUT COPPER FOIL),
 CCL-HL832NS(TYPE-HD)(WITHOUT COPPER FOIL),
 GHPL-830NS, GHPL-830NS(TYPE-LC),
 GHPL-830NS(TYPE-LD), GHPL-830NS(TYPE-HD),
 GHPL-832NS, GHPL-832NS(TYPE-LC),
 GHPL-832NS(TYPE-LD), GHPL-832NS(TYPE-HD)

Lot No. : MGC 2021-026

=====
 Sample Receiving Date : 16-Mar-2021
 Testing Period : 16-Mar-2021 to 22-Mar-2021

Test Requested : As specified by client, to test Halogen-Fluorine, Chlorine, Bromine, Iodine in the submitted sample.

Test Results : Please refer to following pages.

Troy Chang
 Troy Chang, Manager
 Signed for and on behalf of
 SGS TAIWAN LTD.
 Chemical Laboratory - Taipei




PIN CODE: 74F59380

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Test Report

No.: ETR21304559

Date: 22-Mar-2021

Page: 2 of 4

MITSUBISHI GAS CHEMICAL CO., INC. ELECTRONICS MATERIAL DIVISION
5-2, MARUNOUCHI 2-CHOME, CHIYODA-KU, TOKYO 100-8324, JAPAN

Test Part Description

No.1 : BLACK SHEET

Test Result(s)

Test Item(s)	Method	Unit	MDL	Result
				No.1
Fluorine (F) (CAS No.: 14762-94-8)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	505
Chlorine (Cl) (CAS No.: 22537-15-1)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	62.4
Bromine (Br) (CAS No.: 10097-32-2)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	n.d.
Iodine (I) (CAS No.: 14362-44-8)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	n.d.

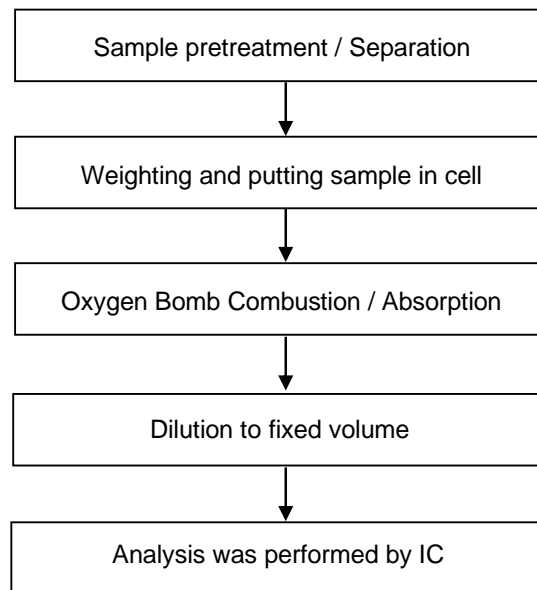
Note :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. MDL = Method Detection Limit
3. n.d. = Not Detected (Less than MDL)

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

MITSUBISHI GAS CHEMICAL CO., INC. ELECTRONICS MATERIAL DIVISION
5-2, MARUNOUCHI 2-CHOME, CHIYODA-KU, TOKYO 100-8324, JAPAN

Analytical flow chart - Halogen



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Test Report

No.: ETR21304559

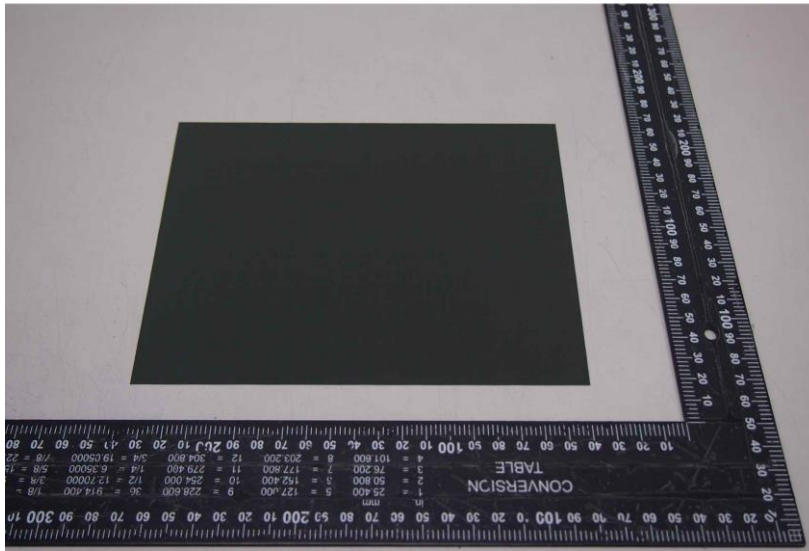
Date: 22-Mar-2021

Page: 4 of 4

MITSUBISHI GAS CHEMICAL CO., INC. ELECTRONICS MATERIAL DIVISION
5-2, MARUNOUCHI 2-CHOME, CHIYODA-KU, TOKYO 100-8324, JAPAN

* The tested sample / part is marked by an arrow if it's shown on the photo. *

ETR21304559



** End of Report **

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.