

No. CTSSA/17639/14

CTS Ref. CTSSA/14/2526/CSC

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CSC STEEL SDN BHD (228899-P) 180, KAWASAN INDUSTRI AYER KEROH, AYER KEROH 75450 MELAKA, MALAYSIA

The following merchandise was (were) submitted and identified by the client as:

Sample Description : realzinc™ Enhance

Sample Receiving Date : 08/09/2014

Testing Period : 08/09/2014 to 12/09/2014

Test Requested : Selected test(s) as requested by client

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Analysts : Loh Mei Theng & Tay Siam Pine

SGS (MALAYSIA) SDN. BHD.

CHÓNG KIEN LEN B.Sc.(HONS) AMIC SENIOR LAB MANAGER

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Test results:

**Test Part Description**:

Sample Description : realzinc™ Enhance

#### **RoHS Directive 2011/65/EU Annex II**

| Test Item(s):              | Unit  | Test Method   | Results | MDL | Limit |
|----------------------------|-------|---|---------|-----|-------|
| Cadmium (Cd)               | mg/kg | With reference to IEC 62321-5:2013 (Determination of Cd by ICP-OES)     | N.D.    | 2   | 100   |
| Lead (Pb)                  | mg/kg | With reference to IEC 62321-5:2013 (Determination of Pb by ICP-OES)     | N.D.    | 2   | 1000  |
| Mercury (Hg)               | mg/kg | With reference to IEC 62321-4:2013 (Determination of Hg by ICP-OES)     | N.D.    | 2   | 1000  |
| Hexavalent Chromium (CrVI) | mg/kg | With reference to JIS H 8625, and performed by UV-VIS Spectrophotometry | 47      | 2   | 1000  |
| Sum of PBBs                | mg/kg | With reference to IEC 62321:2008<br>(Determination of PBB by GC-MS)     | N.D.    | -   | 1000  |
| Monobromobiphenyl          | mg/kg | With reference to IEC 62321:2008<br>(Determination of PBB by GC-MS)     | N.D.    | 5   | -     |
| Dibromobiphenyl            | mg/kg | With reference to IEC 62321:2008<br>(Determination of PBB by GC-MS)     | N.D.    | 5   | -     |
| Tribromobiphenyl           | mg/kg | With reference to IEC 62321:2008<br>(Determination of PBB by GC-MS)     | N.D.    | 5   | -     |
| Tetrabromobiphenyl         | mg/kg | With reference to IEC 62321:2008<br>(Determination of PBB by GC-MS)     | N.D.    | 5   | -     |
| Pentabromobiphenyl         | mg/kg | With reference to IEC 62321:2008<br>(Determination of PBB by GC-MS)     | N.D.    | 5   | -     |
| Hexabromobiphenyl          | mg/kg | With reference to IEC 62321:2008<br>(Determination of PBB by GC-MS)     | N.D.    | 5   | -     |
| Heptabromobiphenyl         | mg/kg | With reference to IEC 62321:2008<br>(Determination of PBB by GC-MS)     | N.D.    | 5   | -     |
| Octabromobiphenyl          | mg/kg | With reference to IEC 62321:2008<br>(Determination of PBB by GC-MS)     | N.D.    | 5   | -     |
| Nonabromobiphenyl          | mg/kg | With reference to IEC 62321:2008<br>(Determination of PBB by GC-MS)     | N.D.    | 5   | -     |
| Decabromobiphenyl          | mg/kg | With reference to IEC 62321:2008<br>(Determination of PBB by GC-MS)     | N.D.    | 5   | -     |

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| Sum of PBDEs             | mg/kg | With reference to IEC 62321:2008 (Determination of PBDE by GC-MS)    | N.D. | - | 1000 |
|--------------------------|-------|--|------|---|------|
| Monobromodiphenyl ether  | mg/kg | With reference to IEC 62321:2008 (Determination of PBDE by GC-MS)    | N.D. | 5 | -    |
| Dibromodiphenyl ether    | mg/kg | With reference to IEC 62321:2008 (Determination of PBDE by GC-MS)    | N.D. | 5 | -    |
| Tribromodiphenyl ether   | mg/kg | With reference to IEC 62321:2008<br>(Determination of PBDE by GC-MS) | N.D. | 5 | -    |
| Tetrabromodiphenyl ether | mg/kg | With reference to IEC 62321:2008 (Determination of PBDE by GC-MS)    | N.D. | 5 | -    |
| Pentabromodiphenyl ether | mg/kg | With reference to IEC 62321:2008<br>(Determination of PBDE by GC-MS) | N.D. | 5 | -    |
| Hexabromodiphenyl ether  | mg/kg | With reference to IEC 62321:2008 (Determination of PBDE by GC-MS)    | N.D. | 5 | -    |
| Heptabromodiphenyl ether | mg/kg | With reference to IEC 62321:2008 (Determination of PBDE by GC-MS)    | N.D. | 5 | -    |
| Octabromodiphenyl ether  | mg/kg | With reference to IEC 62321:2008 (Determination of PBDE by GC-MS)    | N.D. | 5 | -    |
| Nonabromodiphenyl ether  | mg/kg | With reference to IEC 62321:2008 (Determination of PBDE by GC-MS)    | N.D. | 5 | -    |
| Decabromodiphenyl ether  | mg/kg | With reference to IEC 62321:2008 (Determination of PBDE by GC-MS)    | N.D. | 5 | -    |

Note: (a) mg/kg = ppm; (0.1wt% = 1000ppm)

(b) N.D. = Not Detected

(c) MDL = Method Detection Limit

(d) - = Not regulated

(e) Cr6+ result based on plating weight given by client

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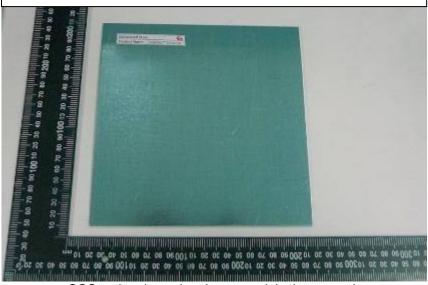
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**Test Part Description**:

Sample Description : realzinc™ Enhance

#### CSC STEEL SDN BHD CTSSA/17639/14



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#### 1. <u>DETERMINATION OF CADMIUM CONTENT BY</u> <u>IEC 62321-5 2013</u>

Sample Receiving and Registration

Cut sample in small pieces

Weight sample (0.2-0.5g) into digestion vessel

Acid digestion (Microwave)

"Totally Dissolved"

Filtration

Analyses by ICP

#### 2. <u>DETERMINATION OF LEAD CONTENT BY</u> <u>IEC 62321-5 2013</u>

Sample Receiving and Registration

Cut sample in small pieces

Weight sample (0.2-0.5g) into digestion vessel

Acid digestion (Microwave)

"Totally Dissolved"

Filtration

Analyses by ICP

## 3. <u>DETERMINATION OF MERCURY CONTENT BY</u> <u>IEC 62321-4 2013</u>

Sample Receiving and Registration

Cut sample in small pieces

Weight sample (0.1-0.5g) into digestion vessel

Acid digestion (Microwave)

"Totally Dissolved"

Filtration

Analyses by ICP

# 4. <u>DETERMINATION OF HEXAVALENT CHROMIUM</u> BY JIS H 8625

Sample Preparation

Hot water extraction

Add colour-developing reagent

Let stand for 5-10 min

Analyses by UV- Spectrophotometer (540 nm)

#### 5. <u>DETERMINATION OF PBB/PBDE WITH GC-MS</u> BY IEC 62321 2008

Cut sample in small pieces

Weight sample (0.5-4.0g) into extraction thimble

Soxhlet Extraction with Toluene

Filter through 0.45 um membrane filter

Analyses by GC-MS (with appropriate dilution)

\*\*\*\* End of Report \*\*\*\*

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