SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier
- Trade name: Alumina Titania
- Product code: #106, #107, #108, #109, #110, #112, #117, #119, #1010, 1342, 7005, 7006, 7012, 9319, 9320, 9321, 9323, 9324, 9375, 9386, 9387, 9388, 9389

1.2 Relevant identified uses of the substance or mixture and uses advised against
- Application of the substance / the mixture: Thermal Spray Powder
- Uses advised against: No further relevant information available.

1.3 Details of the supplier of the Safety Data Sheet
- Manufacturer/Supplier: Saint Gobain Coating Solutions
  One New Bond Street
  Worcester, MA 01615-0137
  (508) 795-5000
  CeramicMaterials@saint-gobain.com

1.4 Emergency telephone number:
ChemTel Inc.
(800) 255-3924 (North America)
(813) 248-0585 (International)
1-300-954-583 (Australia)
0-800-591-6042 (Brazil)
400-120-0751 (China)
000-800-100-4086 (India)
01-800-099-0731 (Mexico)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
- Classification according to Regulation (EC) No 1272/2008
The substance is not classified as hazardous according to the Globally Harmonized System (GHS).
The product is not classified as hazardous according to OSHA GHS regulations within the United States.
The substance is not classified as hazardous according to the CLP regulation.

2.2 Label elements
- Labelling according to Regulation (EC) No 1272/2008
The product is not classified as hazardous according to the CLP regulation.
The product is not classified as hazardous according to OSHA GHS regulations within the United States.
- Hazard pictograms Not Regulated
Trade name: Alumina Titania

- Signal word Not Regulated
- Hazard statements Not Regulated.

2.3 Other hazards There are no other hazards not otherwise classified that have been identified.
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

- 3.1 Substances
  - CAS No. Description
dialuminium titanium pentaoxide
  - Identification number(s)
    - CAS number: 12004-39-6
    - EC number: 234-456-9
    - Registration number: 01-2119954581-34-0000

SECTION 4: First aid measures

- 4.1 Description of first aid measures
  - After inhalation: Supply fresh air; consult doctor in case of complaints.
  - After skin contact:
    - Brush off loose particles from skin.
    - Immediately rinse with water.
    - If skin irritation is experienced, consult a doctor.
  - After eye contact:
    - Remove contact lenses if worn.
    - Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
  - After swallowing:
    - Rinse out mouth and then drink plenty of water.
    - Do not induce vomiting; call for medical help immediately.

- 4.2 Most important symptoms and effects, both acute and delayed
  - Breathing difficulty
  - Coughing
  - May cause gastro-intestinal irritation if ingested.
  - Hazards: Danger of impaired breathing.

- 4.3 Indication of any immediate medical attention and special treatment needed
  - No further relevant information available.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media
  - Suitable extinguishing agents:
    - The product is not flammable.
    - Use fire extinguishing methods suitable to surrounding conditions.
Trade name: Alumina Titania

- For safety reasons unsuitable extinguishing agents: None.
- 5.2 Special hazards arising from the substance or mixture
  No further relevant information available.
- 5.3 Advice for firefighters
  - Protective equipment:
    Wear self-contained respiratory protective device.
    Wear fully protective suit.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures
  Ensure adequate ventilation
  Do not breathe dust.
  Wear appropriate NIOSH or EU approved respirator when ventilation is inadequate and occupational exposure limits are exceeded.
- 6.2 Environmental precautions
  Avoid release to the environment.
- 6.3 Methods and material for containment and cleaning up
  Pick up mechanically.
  Send for recovery or disposal in suitable receptacles.
- 6.4 Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling
  Use only in well ventilated areas.
  Prevent formation of dust.
  Any unavoidable deposit of dust must be regularly removed.
  Information about fire - and explosion protection: Keep respiratory protective device available.
- 7.2 Conditions for safe storage, including any incompatibilities
  - Requirements to be met by storerooms and receptacles: Store in a cool location.
  - Information about storage in one common storage facility: Store away from foodstuffs.
  - Further information about storage conditions: Store in dry conditions.
- 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

- 8.1 Control parameters
  - Ingredients with limit values that require monitoring at the workplace:
    The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- 8.2 Exposure controls

(Cont’d. from page 2)
Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA
GHS

Printing date: 14 August 2018
Revision: 14 August 2018

Trade name: Alumina Titania

· General protective and hygienic measures:
The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
Avoid breathing dust.
Avoid close or long term contact with the skin.
Avoid contact with the eyes.

· Respiratory protection:
For spills, respiratory protection may be advisable.
An EU approved dust respirator should be used for operations generating dust.
Particulate mask should filter at least 99% of airborne particles.

· Protection of hands:
Wear gloves for the protection against mechanical hazards according to NIOSH or EN 388.

· Eye protection: Follow relevant national guidelines concerning the use of protective eyewear.

· Body protection: Protective work clothing

· Limitation and supervision of exposure into the environment: Avoid release to the environment.

· Risk management measures: No further relevant information available.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

- Appearance
  - Form: Powder
  - Colour: Grey
  - Odour: Odourless
  - Odour threshold: Not determined.

- pH-value: Not applicable.
- Melting point/freezing point: 1860 °C (3.380 °F)
- Initial boiling point and boiling range: Not determined.

- Flash point: Not applicable.

- Flammability (solid, gas): Not determined.
- Auto/Self-ignition temperature: Not determined.
- Decomposition temperature: Not determined.

- Explosive properties: Product does not present an explosion hazard.

- Explosion limits
  - Lower: Not determined.
  - Upper: Not determined.

- Oxidising properties
  - Non-oxidising.

- Vapour pressure: Not determined.

- Density
  - Relative density at 20 °C (68 °F): 3.65
  - Vapour density: Not applicable.

(Cont'd. from page 3)

(Cont'd. on page 5)
贸易名称: Alumina Titania

（续前页4）

蒸发速率: 不适用。
- 溶解性/混溶性与水: 不溶。
- 分配系数: n-octanol/water: 不确定。
- 粘度
  动态: 不适用。
  动态: 不适用。
- 9.2 其他信息
  无进一步的相关信息可用。

SECTION 10: 稳定性和反应性

- 10.1 反应性
  无进一步的相关信息可用。
- 10.2 化学稳定性
  稳定于正常温度和压力下。
- 热分解 / 条件需避免:
  无分解，若使用并保存符合规格。
- 10.3 可能的危险反应
  与强酸和碱反应。
  产品供应时，不包含爆炸性粉尘；然而，富集可导致粉尘爆炸。
- 10.4 避免条件
  湿度。
- 10.5 不相容材料
  强酸。
- 10.6 危险分解产物
  有毒金属化合物

SECTION 11: 毒理学信息

- 11.1 毒理学信息
  - 急性毒性: 基于可用数据，分类标准未见满足。
  - LD/LC50 值
    无。
  - 初始刺激性
    - 皮肤腐蚀/刺激: 基于可用数据，分类标准未见满足。
    - 严重眼损伤/刺激: 基于可用数据，分类标准未见满足。
    - 呼吸或皮肤刺激: 基于可用数据，分类标准未见满足。
  - 肿瘤分类
    - 物质未列为。
  - 可能接触途径
    摄入。
    呼吸。
    眼接触。
    皮肤接触。
  - 急性效应 (急性毒性、刺激和腐蚀性)
    无进一步的相关信息可用。
  - 反复剂量毒性: (续前页6)
SECTION 12: Ecological information

- 12.1 Toxicity
  - Aquatic toxicity: No further relevant information available.
- 12.2 Persistence and degradability: No further relevant information available.
- 12.3 Bioaccumulative potential: No further relevant information available.
- 12.4 Mobility in soil: No further relevant information available.
- Additional ecological information:
  - General notes:
    Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- 12.5 Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.
- 12.6 Other adverse effects: No further relevant information available.

SECTION 13: Disposal considerations

- 13.1 Waste treatment methods
  - Recommendation
    Smaller quantities can be disposed of with household waste.
    Contact waste processors for recycling information.
    The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.
  - Uncleaned packaging:
    - Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

- 14.1 UN-Number
  - DOT, ADR, IMDG, IATA: Not Regulated
- 14.2 UN proper shipping name
  - DOT, ADR, IMDG, IATA: Not Regulated
**Trade name: Alumina Titania**

(Cont'd. from page 6)

<table>
<thead>
<tr>
<th>14.3 Transport hazard class(es)</th>
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<td>DOT, ADR, IMDG, IATA</td>
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<th>14.4 Packing group</th>
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<th>14.5 Environmental hazards:</th>
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<td>Marine pollutant: No</td>
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<th>14.6 Special precautions for user</th>
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<th>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</th>
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**SECTION 15: Regulatory information**

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<tr>
<th>15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture</th>
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<tbody>
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<td>United States (USA)</td>
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<td>SARA</td>
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<th>TSCA (Toxic Substances Control Act):</th>
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<th>Proposition 65 (California):</th>
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<td>Chemicals known to cause cancer:</td>
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<th>Chemicals known to cause developmental toxicity for females:</th>
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<tr>
<th>Chemicals known to cause developmental toxicity for males:</th>
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<th>Chemicals known to cause developmental toxicity:</th>
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<tr>
<th>EPA (Environmental Protection Agency)</th>
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<tr>
<th>IARC (International Agency for Research on Cancer)</th>
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(Cont'd. on page 8)
SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Abbreviations and acronyms:
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bio-accumulative, Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative

Sources
Website, European Chemicals Agency (echa.europa.eu)
Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor internet/registry/substreg/home/overview/home.do)
Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)
Safety Data Sheets, Individual Manufacturers
SDS Prepared by:
ChemTel Inc.
1305 North Florida Avenue
Tampa, Florida USA 33602-2902
Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573
Website: www.chemtelinc.com