SAFETY DATA SHEET

Regulation (EC) No 1907/2006 (REACH), Article 31 Revision date: 20-Aug-2015

According to Article 31 of the Regulation (EC) No 1907/2006 (REACH), a Safety Data Sheet (SDS) must be provided for hazardous substances or mixtures. This product does not meet the classification criteria of the Regulation (EC) No 1272/2008 (CLP) . Therefore such document is outside the scope of Article 31 of REACH and the requirements for content in each section do not apply

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1. Product Identifier

Product code: TGCAT100

Product name: ATLAS™ 100 Silica Composite

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use: External additive in toner formulations

Uses advised against: No information available.

1.3. Details of the supplier of the safety data sheet

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1.4. Emergency telephone number

Emergency Telephone Number:	24H/7d service Germany: CHEMTREC 0800-181-7059 UK: CHEMTREC: (+44)-870-8200418 US: CHEMTREC 1-800-424-9300 or 1-703-527-3887 CHEMTREC China: 4001-204937 International CHEMTREC: +1 703-741-5970 or +1-703-527-3887

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Not a hazardous substance according to Regulation (EC) 1272/2008 (CLP), its various amendments and adaptations.

2.2. Label Elements

Pictogram:
None

Signal Word:
None

Hazard statements:
None

Precautionary statements:
None

2.3. Other Hazards

This substance is classified as hazardous as a combustible dust by the United States 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Hazardous Products Regulation (HPR) 2015. The signal word, hazard statement and precautionary statements in the United States and Canada are: WARNING May form combustible dust concentrations in air. Keep away from all ignition sources including heat, sparks and flame. Prevent dust accumulations to minimize explosion hazard.

Do not expose to temperatures above 200°C. Hazardous products of combustion can include carbon monoxide, carbon dioxide and nitrogen oxides (NOx). Thermal decomposition can lead to release of irritating gases and vapors.

Principle Routes of Exposure:	Inhalation, Skin Contact, Eye contact
Eye Contact:	May cause mechanical irritation. Avoid contact with eyes.
Skin Contact:	May cause mechanical irritation and skin drying. Avoid contact with skin.
Inhalation:	Dust may be irritating to respiratory tract. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated. See also Section 8.
Ingestion:	Adverse health effects are not expected. See Section 11.

Carcinogenicity:	Does not contain any substances greater than 0.1% listed by IARC (International Agency for Research on Cancer), NTP (National Toxicology Program), OSHA (Occupational Safety and Health Administration), ACGIH (American Conference for Governmental Industrial Hygienists) or EU (European Union). See also Section 11.
Target Organ Effects:	Lungs, See Section 11
Medical Conditions Aggravated by Exposure:	Asthma, Respiratory disorder
Potential Environmental Effects:	None known. See Section 12.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical name	EC No	CAS No	weight-%	Classification according to Directive 67/548/EEC or 1999/45/EC	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number
Modified silica-polymer particle	Not Listed	-	>99.9	-	-	*

Other Information:
The hyphen (-) means "not applicable"
*: Proprietary

4. FIRST AID MEASURES

4.1. Description of first aid measures

Skin Contact	Wash thoroughly with soap and water. Seek medical attention if symptoms develop.
Eye contact	Flush eyes immediately with large amounts of water for 15 minutes. Seek medical attention if symptoms develop.
Inhalation	If cough, shortness of breath or other breathing problems occur, move to fresh air. Seek medical attention if symptoms persist. If necessary, restore normal breathing through standard first aid measures.
Ingestion	Do not induce vomiting. If conscious, give several glasses of water. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms:	The most important known symptoms and effects are described in Section 2 and/or in Section 11.

4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use foam, carbon dioxide (CO2), dry chemical or water spray. A fog is recommended if water is used.

Unsuitable Extinguishing Media: DO NOT USE high pressure media which could cause formation of a potentially explosible dust-air mixture.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical: None.

Hazardous combustion products: Carbon monoxide (CO). Carbon dioxide (CO2). Nitrogen oxides (NOx). Thermal decomposition can lead to release of irritating gases and vapors.

5.3. Advice for firefighters

Special protective equipment for fire-fighters: Wear suitable protective equipment. In the event of fire, wear self-contained breathing apparatus.

Risk of Dust Explosion: Dust may form explosive mixture in air. See also Section 9.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Avoid dust formation. Remove all sources of ignition. Ensure adequate ventilation. Use personal protective equipment. See also Section 8.

For emergency responders: Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental Precautions: Contain spilled product on land, if possible. Local authorities should be advised if significant spillages cannot be contained.

6.3. Methods and material for containment and cleaning up

Methods for containment: Prevent further leakage or spillage if safe to do so.

Methods for cleaning up: If the spilled material contains dust or has the potential to create dust, use explosion-proof vacuums and/or cleaning systems suitable for combustible dusts. Use of a vacuum with high efficiency particulate air (HEPA) filtration is recommended. Do not create a dust cloud by using a brush or compressed air. Dry sweeping is not recommended. Pick up and transfer to properly labelled containers. See Section 13.

6.4. Reference to other sections

Reference to other sections: See section 8 for more information. See section 13 for more information.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling: Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated. Do not create a dust cloud by using a brush or compressed air. Dust may form explosible mixture in air.

Take precautionary measures against static discharges. All metal parts of the mixing and processing equipment must be earthed/grounded. Ensure all equipment is electrically earthed/grounded before beginning transfer operations. Fine dust is capable of penetrating electrical equipment and may cause electrical shorts.

General hygiene considerations: Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions: Keep containers tightly closed in a dry and well-ventilated place. Do not store together with volatile chemicals as they may be adsorbed onto product. Store at ambient conditions. Keep away from heat and sources of ignition. Keep in properly labeled containers.

Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosible mixture if they are released in the atmosphere in sufficient concentrations.

Incompatible materials: No information available.

7.3. Specific end use(s)

Risk Management Measures (RMM) Per Article 14.4 of the REACH Regulation no exposure scenario has been developed as the substance is not hazardous.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure guidelines: There are no exposure limits identified for this product. Exposure limits for dust are stated below. Exposure limits for silica are stated below.

Amorphous Silica, The regulatory exposure limits are found under the general silica, CAS RN 7631-86-9:

Australia:	2 mg/m³, TWA, Respirable
Austria MAK	4 mg/m³, TWA, Inhalable fraction
Finland:	5 mg/m³
Germany TRGS 900:	4 mg/m³, TWA, Inhalable fraction
India:	10 mg/m³, TWA
Ireland:	2.4 mg/m³, TWA, Respirable dust
Norway:	1.5 mg/m³, TWA, Respirable dust
Switzerland:	4 mg/m³, TWA
UK WEL:	6 mg/m³, TWA, Inhalable fraction
	2.4 mg/m³, TWA, Respirable fraction
US OSHA PEL:	6mg/m³ (54 FR2701)

Dust, or Particulates Not Otherwise Specified:	Belgium:	10 mg/m³, TWA, Inhalable 3 mg/m³ TWA, Respirable
	China:	8 mg/m³, TWA 10 mg/m³, STEL
	France:	10 mg/m³, TWA Inhalable dust 5 mg/m³, TWA Respirable dust
	Italy:	10 mg/m³, TWA, Inhalable 3 mg/m³, TWA, Respirable
	Malaysia:	10 mg/m³, TWA, Inhalable 3 mg/m³, TWA, Respirable
	Spain:	10 mg/m³, VLA, Inhalable 3 mg/m³, VLA, Respirable
	US ACGIH - PNOS:	10 mg/m³, TWA, Inhalable 3 mg/m³, TWA, Respirable
	US OSHA - PEL:	15 mg/m³, TWA, Total dust 5 mg/m³, TWA, Respirable

NOTE:

In its facilities globally, Cabot Corporation manages silica to the Germany TRGS 900 occupational exposure limit of 4 mg/m³, TWA, Inhalable fraction

MAK: Maximale Arbeitsplatzkonzentration (Maximum Workplace Concentration)
PEL: Permissible Exposure Limit
PNOS: Particulate Not Otherwise Specified
STEL: Short Term Exposure Limit
TRGS: Technische Regeln für Gefahrstoffe (Technical Rule for Hazardous Materials)
TWA: Time Weighted Average
US ACGIH: United States American Conference of Governmental Industrial Hygienists
US OSHA: United States Occupational Safety and Health Administration
VLA: Valore Límite Ambientales (Environmental Limit Value)
WEL: Workplace Exposure Limit

Derived No Effect Level (DNEL):	As required under the EU Registration, Evaluation and Authorization of Chemicals (REACH) Regulation, the Synthetic Amorphous Silica REACH Consortium (of which Cabot Corporation is a member) developed a Derived No Effect Level (DNEL) for Synthetic Amorphous Silica of 4 mg/m³ inhalable (Germany TRGS 900 occupational exposure limit).
Predicted No Effect Concentration (PNEC)	No information available.

8.2. Exposure controls

Engineering Controls:	Ensure adequate ventilation to maintain exposures below occupational limits. Provide appropriate local exhaust ventilation at machinery and at places where dust can be generated.

Personal protective equipment [PPE]

Respiratory Protection:	If exposures are expected, wear a certified particulate respirator in accordance with national regulation: US: NIOSH-certified respirator (42 CFR 84) EU: EN-certified respirator (EU Directive 89/686/EEC).
Hand Protection:	Wear protective gloves to prevent skin drying. Use protective barrier cream before handling the product. Wash hands and other exposed skin with mild soap and water.
Eye/face Protection:	Wear eye/face protection. Wear safety glasses with side shields (or goggles).
Skin and Body Protection:	Wear suitable protective clothing. Wash clothing daily. Work clothing should not be allowed out of the workplace.
Other:	Handle in accordance with good industrial hygiene and safety practice. Emergency eyewash and safety shower should be located nearby.
Environmental exposure controls:	In accordance with all local legislation and permit requirements as applicable for dusts.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid	Odor:	None.
Appearance:	Powder	Odor threshold:	Not Applicable
Color:	Off-white		

Property	Values	**Remarks • Method**
pH:		No information available
Melting point/freezing point:		No information available
Boiling point / boiling range:		No information available
Evaporation Rate:		Not Applicable
Vapor pressure:		Not Applicable
Vapor Density:		Not Applicable
Density:	1.4 - 2.2 g/cm3	
Bulk Density:		No information available
Specific Gravity at 20°C:	1.4-2.2	
Water solubility:	Insoluble in water	
Solubility(ies):	Insoluble in solvents	
Partition Coefficient (n-octanol/water):		Not Applicable
Decomposition temperature:	> 200 °C	Bulk Powder test- Diffusion cell
Viscosity:		Not Applicable
Kinematic viscosity:		Not Applicable
Dynamic viscosity:		Not Applicable
Oxidizing Properties:		No oxidizing properties
Softening point:		No information available
VOC content (%):		Not Applicable
% Volatile (by Volume):		Not Applicable
% Volatile (by Weight):		Not Applicable
Surface Tension:		Not Applicable
Explosive properties:		Dust may form explosible mixture in air

Flash Point:		Not Applicable
Flammability (solid, gas):	Not flammable	Not readily combustible (Class 4.1) per UN Recommendations on the Transportation of Dangerous Goods test method
Flammability Limit in Air:		
Explosion Limits in Air - Upper (g/m^3):		No information available
Explosion Limits in Air - Lower (g/m^3):	>160 g/m^3	ASTM E-1515, Dust cloud
Autoignition Temperature:		No information available
Minimum Ignition Temperature:	450-550 °C	ASTM E-1491, Dust cloud
	240-250 °C	ASTM E-2021, Dust layer
Minimum Ignition Energy:	300-500 mJ	Low sensitivity to ignition. ASTM E-2019, Dust cloud
Ignition Energy:		No information available
Maximum Absolute Explosion Pressure:	7.1 bar	ASTM E-1226 (20-L Sphere Test)
Maximum Rate of Pressure Rise:	536 bar/sec	ASTM E-1226 (20-L Sphere Test)
Burn Velocity:		No information available
Kst Value:	145 bar.meter/second	ASTM E-1226 (20-L Sphere Test)
Dust Explosion Classification:	ST1	Weak Explosion ASTM E-1226 OSHA CPL-03-00-008

End point is listed "not applicable" due to the inherent properties of the substance
"No information available" indicates testing has not been performed

10. STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity: Not reactive.

10.2. Chemical stability

Stability: Stable under recommended handling and storage conditions.
Stable up to 200° C. Onset temperature: 213°C (Bulk Powder Test - Diffusion cell).

Explosion data

Sensitivity to Mechanical Impact: None

Sensitivity to Static Discharge: Dust may form explosible mixture in air. Avoid dust formation. Do not create a dust cloud by using a brush or compressed air. Take precautionary measures against static discharges. All metal parts of the mixing and processing equipment must be earthed/grounded. Ensure all equipment is electrically earthed/grounded before beginning transfer operations.

10.3. Possibility of hazardous reactions

Hazardous polymerization: Hazardous polymerization does not occur.

Possibility of hazardous reactions: None under normal processing.

10.4. Conditions to avoid

Conditions to avoid: Do not expose to temperatures above 200°C. (Bulk Powder Test - Diffusion Cell). Keep away from heat and sources of ignition. Avoid dust formation.

10.5. Incompatible materials

Incompatible materials: No information available

10.6. Hazardous decomposition products

Hazardous decomposition products: Carbon monoxide (CO), Carbon dioxide (CO2), Nitrogen oxides (NOx), Thermal decomposition can lead to release of irritating and toxic gases and vapors

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity

Oral LD50:	LD50/oral/rat = > 2000 mg/kg. No deaths occurred and no signs of toxicity were seen during the observation periods after single oral administration of the substance, (OECD 420).
Inhalation LC50:	No information available
Dermal LD50:	No information available
Skin corrosion/irritation:	Primary irritation index = 0.0 @ 24 hr. Not classified as an irritant (OECD 404).
Serious eye damage/eye irritation:	May cause mechanical irritation. Eye irritation test, rabbit (OECD 405): Not irritating. Not classified as an eye irritant per UN GHS rules.
Sensitization:	Contains no known sensitizers.
Germ Cell Mutagenicity	Not mutagenic in Ames test.
Carcinogenicity:	No information available.
Reproductive and Developmental Toxicity:	No information available.
STOT - single exposure:	No information available.
STOT - repeated exposure:	No information available.
Aspiration Hazard:	No information available.

12. ECOLOGICAL INFORMATION

Product, as formulated, has not been tested.

12.1. Toxicity

Aquatic Toxicity: No information available.

12.2. Persistence and degradability

No information available

12.3. Bioaccumulative potential

No information available.

12.4. Mobility in soil

Mobility: No information available.

12.5. Results of PBT and vPvB assessment

No information available.

12.6. Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Disclaimer: Information in this section pertains to the product as shipped in its intended composition as described in Section 3 of this MSDS. Contamination or processing may change waste characteristics and requirements. Regulations may also apply to empty containers, liners or rinsate. State/provincial and local regulations may be different from federal regulations. The person generating waste must determine its proper classification

13.1. Waste treatment methods

Waste from residues/unused products:	Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Not a self-heating solid (Class 4.2) per UN/DOT Recommendations on the Transportation of Dangerous Goods test method

DOT

14.1 UN/ID no	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing group	Not regulated

IMDG

14.1 UN/ID no	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing group	Not regulated

RID

14.1 UN/ID no	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing group	Not regulated

ADR

14.1 UN/ID no	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing group	Not regulated

ICAO (air)

14.1 UN/ID no	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing group	Not regulated

IATA

14.1 UN/ID no	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing group	Not regulated

15. REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union

Not a hazardous substance according to EC-Directive 67/548/EC, its various amendments and adaptations and EC-Regulation 1272/2008 (CLP).

Germany Water hazard class (WGK): Not determined Swiss Poison class: Not determined

Other: Not a hazardous substance according to the current Regulation T.C 27092 of Turkish Ministery of Environment and Forestry 26.12.2008 concerning the "Preparation and Distribution of Safety Data Sheets regarding to Dangerous Substances and Preparations" and the new Turkish Regulation T.C. No. 28848/2013 on Classification, Labelling and Packaging (SEA)

International Inventories

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory	Complies
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List	Complies
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances	Complies
ENCS - Japan Existing and New Chemical Substances	Complies
IECSC - China Inventory of Existing Chemical Substances	Complies
KECL - Korean Existing and Evaluated Chemical Substances	Complies
PICCS - Philippines Inventory of Chemicals and Chemical Substances	Complies
AICS - Australian Inventory of Chemical Substances	Does not comply
NZIoC - New Zealand Inventory of Chemicals	Complies
TCSI - Taiwan Chemical Substance Inventory	Complies

Low Volume Requirements apply in the following countries - Please contact your Cabot Sales Representative for more information: Canada. Europe. Turkey.

Note: "Complies" means either 'Listed" or "Exempt" This product qualifies for an exemption from notification under the National Chemical Control Law of the countries listed above. Cabot has taken necessary actions to allow direct sales in those countries. Should our customers have exporting plans for their product containing ATLAS material, please contact your Sales Representative for more information.

The chemicals in inkjet and toner cartridges may not be subject to notification when imported as finished cartridges in the following countries under an "article" exemption: Canada (but not the Province of Ontario), Japan and New Zealand. Please contact your Cabot sales representative for more information

15.2. Chemical safety assessment

EU Chemical Safety Assessment: A Chemical Safety Assessment has been carried out for Synthetic Amorphous Silica.

EU Exposure Scenarios: Per Article 14.4 of the REACH Regulation no exposure scenario has been developed as the substance/mixture is not hazardous.

16. OTHER INFORMATION

Cosmetic Use:
Not permitted

Pharmaceutical Use:
Not permitted

Food Additive Use:
Not permitted

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Prepared by: Cabot Corporation - Safety, Health and Environmental Affairs
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End of Safety Data Sheet