SAFETY DATA SHEET

Regulation (EC) No 1907/2006 (REACH), Article 31

Revision date: 01-Feb-2018

Version: 5

According to Article 31 of the Regulation (EC) No 1907/2006 (REACH), a Safety Data Sheet (SDS) must be provided for hazardous substances or preparations. 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: ASPEC

Product name: NORIT® A SPECIAL E 153

REACH registration number: 01-2119488894-16

Synonyms: Activated carbon

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

Recommended use: Liquid and vapor applications (purification, decolorization, separation, catalyst and deodorization)

Uses advised against: None known.

1.3. Details of the supplier of the safety data sheet

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1.4. Emergency telephone number

Emergency Telephone Number: The Netherlands CHEMTREC: +(31)-858880596
International CHEMTREC: +1 703-741-5970 or +1-703-527-3887
US: CHEMTREC: 1-800-424-9300 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 and Directive 67/548/EEC.

2.2. Label Elements

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.

Activated carbon (especially when wet) can deplete oxygen from air in enclosed spaces, and dangerously low levels of oxygen may result. Prior to entering a confined space that contains or previously contained activated carbon, the space should be evaluated for oxygen and carbon monoxide concentrations, and any other hazards, by a qualified person.

Workers should also take appropriate precautions when dealing with spent (used) activated carbons which may exhibit hazardous properties associated with the adsorbed materials.

Avoid dust formation. Powdered material may form an explosible dust-air mixture. If transferring product under pressure, avoid generation of dust if an ignition source is present.

Activated carbons have high surface area which may cause self-heating during oxidation. See Section 5.

Do not generate dust because airborne respirable crystalline silica may be generated.

Principle Routes of Exposure:	Inhalation, Eye contact, Skin Contact
Eye Contact:	May cause mechanical irritation. Avoid contact with eyes.
Skin Contact:	May cause mechanical irritation. Avoid contact with skin.
Inhalation:	Dust may be irritating to respiratory tract. Provide appropriate local exhaust ventilation at machinery and at places where dust can be generated. See also Section 8.
Ingestion:	Adverse health effects are not known or expected under normal use.
Carcinogenicity:	See Section 11.
Target Organ Effects:	Lungs, Eyes, Skin

Medical Conditions Aggravated by Exposure: Asthma, Respiratory disorder, Skin disorders

Potential Environmental Effects: None known. See also 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
Activated Carbon	931-328-0	7440-44-0	100	-	-	01-2119488894-16

Other Information:
This product, which is manufactured from a naturally occurring raw material(s), contains <5% total crystalline silica (quartz, CASRN 14808-60-7).

The hyphen (-) means "not applicable"

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 foam, carbon dioxide (CO2), dry chemical or water spray. A fog is recommended if water is used.
Unsuitable Extinguishing Media:	DO NOT USE a solid water stream as it may scatter and spread fire. DO NOT USE high pressure media which could cause formation of a potentially explosible dust-air mixture. In the event of a fire, spreading large amounts of activated carbon is not recommended due to the risk of creating uncontrolled dust emissions.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical:	Burning produces irritant fumes. If transferring product under pressure, avoid generation of dust if an ignition source is present. Activated carbons have high surface area which may cause self-heating during oxidation. An adequate air gap between packages of activated carbon is recommended to reduce risk of propagation of the event. Activated carbon is difficult to ignite and tends to burn slowly (smolder) without producing smoke or flame.
Hazardous combustion products:	Materials allowed to smolder for long periods in enclosed spaces may produce amounts of carbon monoxide which reach the lower explosive limit (carbon monoxide LEL = 12.5% in air). Used activated carbon may produce additional combustion products which are based on the substance(s) adsorbed. Carbon monoxide (CO). Carbon dioxide (CO2).

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.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions:	Avoid dust formation. 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:	No special environmental precautions required. Local authorities should be advised if 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:	Avoid dry sweeping and use water spraying or vacuum cleaning systems to prevent airborne dust generation. 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. Pick up and transfer to properly labelled containers. Spent granular activated carbon may be recyclable. Dispose of virgin (unused) carbon (surplus or spillage) in a facility permitted for non-hazardous wastes. Spent (used) carbon should be disposed of in accordance with applicable laws. Do not reuse empty bags: dispose of in a facility permitted for

non-hazardous wastes. 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 local 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.

Activated carbons have high surface area which may cause self-heating during oxidation. 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. If hot work (welding, torch cutting, etc.) is required the immediate work area must be cleared of product and dust.

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 in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Do not store together with strong oxidizing agents. Do not store together with volatile chemicals as they may be adsorbed onto product. Keep in properly labeled containers. Activated carbon is difficult to ignite and tends to burn slowly (smolder) without producing smoke or flame. 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. Prior to entering a confined space that contains or previously contained activated carbon, the space should be evaluated for oxygen and carbon monoxide concentrations, and any other hazards, by a qualified person.

Incompatible materials: Strong oxidizing agents. Strong acids.

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: .

Exposure limits for components or similar components are stated below.

Dust, or Particulates Not Otherwise Specified:	Austria MAK:	10 mg/m³, STEL 2x30 min, Inhalable dust 5 mg/m³, TWA, Inhalable dust

	Belgium:	10 mg/m³, TWA, Inhalable 3 mg/m³ TWA, Respirable
	Canada (Saskatchewan):	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
	Germany - TRGS 900:	10 mg/m³, TWA, Inhalable 3 mg/m³, Respirable fraction
	Hong Kong:	10 mg/m³, TWA
	Ireland:	10 mg/m³, TWA, Total inhalable 4 mg/m³, TWA, Respirable
	Italy:	10 mg/m³, TWA, Inhalable 3 mg/m³, TWA, Respirable
	Japan:	3 mg/m³ TWA, Respirable
	Malaysia:	10 mg/m³, TWA, Inhalable 3 mg/m³, TWA, Respirable
	The Netherlands:	3.5 mg/m³, Inhalable
	Spain:	10 mg/m³, VLA, Inhalable 3 mg/m³, VLA, Respirable
	Sweden:	10 mg/m³, NGV, Total inhalable 5 mg/m³, NGV, Respirable
	United Kingdom - WEL:	10 mg/m³, TWA, Total Inhalable dust 4 mg/m³, TWA, Respirable dust
	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
Silica, Crystalline (Quartz) CAS RN 14808-60-7:	Austria MAK:	0.15 mg/m³, TWA (Respirable)
	Belgium:	0.1 mg/m³, TWA (Alveolar fraction)
	Denmark:	0.1 mg/m³, TWA (Respirable)
	Finland:	0.05 mg/m³, TWA (Respirable)
	France:	0.1 mg/m³, VME (Alveolar fraction)
	Ireland:	0.1 mg/m³, TWA (Respirable)
	Italy:	0.025 mg/m³, TWA (Respirable)
	Japan:	(3 mg/m³)/(1.19%SiO2 + 1) (Respirable)

Switzerland:	0.15 mg/m³, TWA (Respirable)
UK WEL:	0.1 mg/m³, TWA (Respirable)
US OSHA PEL:	0.05 mg/m³ (Respirable)
US ACGIH TLV:	0.025mg/m³ (Respirable)

In its facilities globally, Cabot Corporation manages crystalline silica to the US ACGIH TLV of 0.025 mg/m³ (Respirable)

MAK: Maximale Arbeitsplatzkonzentration (Maximum Workplace Concentration)
NGV: Nivå Gräns Värde (Level Limit Value)
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value
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 Activated Carbon REACH Consortium (of which Cabot Corporation is a member) developed the following Derived No Effect Levels (DNELs) for Activated Carbon based on a 90-day repeated dose inhalation toxicity study in rats: DNELworker of 1.8 mg/m³ (respirable) and DNELconsumer of 0.9 mg/m³ (respirable).
Predicted No Effect Concentration (PNEC)	According to the guidelines of the EU Registration, Evaluation and Authorization of Chemicals (REACH), a Predicted No Effect Concentration (PNEC)soil of 10 mg/kg soil was derived based on an earthworm reproduction study. No other PNECs are derived.

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:	Approved respirator may be necessary if local exhaust ventilation is not adequate.
Hand Protection:	Wear suitable gloves.
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:	No special environmental precautions required. Local authorities should be advised if spillages cannot be contained.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information given is based on data obtained from this substance or from similar substances.

Physical State:	Solid	Odor:	Generally odorless. May produce slight sulfur smell when wet.
Appearance:	Powder	Odor threshold:	Not Applicable
Color:	Black		

Property	Values	Remarks • Method
pH:		Not Applicable
Melting point/freezing point:		Not Applicable
Boiling point / boiling range:		Not Applicable
Evaporation Rate:		Not Applicable
Vapor pressure:		Not Applicable
Vapor Density:		Not Applicable
Density:		No information available
Bulk Density:	100-200 kg/m³	
Specific Gravity at 20°C:		No information available
Water solubility:		Insoluble
Solubility(ies):		No information available
Partition Coefficient (n-octanol/water):		No information available
Decomposition temperature:		No information available
Viscosity:		No information available
Kinematic viscosity:		No information available
Dynamic viscosity:		No information available
Oxidizing Properties:		Not Applicable
Softening point:		No information available
VOC content (%):		Not Applicable
% Volatile (by Volume):		No information available
% Volatile (by Weight):		No information available
Surface Tension:		No information available
Explosive properties:		Dust may form explosible mixture in air
Flash Point:		Not Applicable
Flammability (solid, gas):		No information available
Flammability Limit in Air:		No information available
Explosion Limits in Air - Upper (g/m³):		No information available
Explosion Limits in Air - Lower (g/m³):	20 g/m³	EN 14034-3
Autoignition Temperature:		No information available
Minimum Ignition Temperature:	540 °C	VDI 2263
		No information available
Minimum Ignition Energy:	> 10 J	VDI 2263 Blatt 1 or MIKE 3 - EN 13821
Ignition Energy:		No information available
Maximum Absolute Explosion Pressure:	8.1 bar	EN 14034-2
Maximum Rate of Pressure Rise:	461 bar/sec	EN 14034
Burn Velocity:		No information available
Kst Value:	125 bar.meter/second	EN 14034-2
Dust Explosion Classification:	ST1	

10. STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity: May react exothermically upon contact with strong oxidizers.

10.2. Chemical stability

Stability: Stable under recommended handling and storage conditions.

Explosion data

Sensitivity to Mechanical Impact: Not sensitive to mechanical impact

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: Keep away from heat and sources of ignition. Avoid dust formation. Activated carbon (especially when wet) can deplete oxygen from air in enclosed spaces, and dangerously low levels of oxygen may result.

Activated carbons have high surface area which may cause self-heating during oxidation.

10.5. Incompatible materials

Incompatible materials: Strong oxidizing agents, Strong acids

10.6. Hazardous decomposition products

Hazardous decomposition products: Materials allowed to smolder for long periods in enclosed spaces may produce amounts of carbon monoxide which reach the lower explosive limit (carbon monoxide LEL = 12.5% in air), Used activated carbon may produce additional combustion products which are based on the substance(s) adsorbed, Carbon oxides

11. TOXICOLOGICAL INFORMATION

Information given is based on data obtained from this substance or from similar substances.

11.1. Information on toxicological effects

Acute toxicity

Not classified.

Oral LD50: LD50/oral/rat = >2000 mg/kg. (OECD 423).

Inhalation LC50:	LC50/inhalation/1h/rat = >8.5 mg/L (OECD 403)
Dermal LD50:	Absorption highly unlikely, no health effects known
Skin corrosion/irritation:	Not classified. Skin irritation test, rabbit (OECD 404): Not irritating.
Serious eye damage/eye irritation:	Not classified. Eye irritation test, rabbit (OECD 405): Not irritating.
Sensitization:	Not classified. Not sensitizing based on Local Lymph Node Assay (OECD 429).
Mutagenicity:	Not classified. - Gene mutation in bacteria (Bacterial Reverse Mutation Assay/Ames) (OECD 471): not mutagenic. - In vitro Mammalian Chromosome Aberration Test (OECD 473): not clastogenic. - In vitro Mammalian Cell Gene Mutation Test (OECD 476).: non-mutagenic.
Carcinogenicity:	Not classified. Contains a component (crystalline silica) that is listed by IARC as group 1, by ACGIH as group A2, and by NTP as a known human carcinogen.
Reproductive Toxicity:	Not classified. Repeated dose inhalation toxicity test showed no reproductive target organ effects, and a toxicokinetic study showed no product migration to reproductive organs.
STOT - single exposure:	Not classified.
STOT - repeated exposure:	Not classified. Repeated dose toxicity study, inhalation (rat) 90 days (OECD 413): NOAEC 7.29 mg/m³ (respirable). This test was conducted on activated carbon containing negligible crystalline silica; therefore activated carbon itself is not classified for STOT-RE. Although respirable crystalline silica is classified as STOT-RE1, this product contains <1% respirable crystalline silica, therefore it is not classified for STOT-RE.
Aspiration Hazard:	Based on industrial experience and available data, no aspiration hazard is expected.

12. ECOLOGICAL INFORMATION

Information given is based on data obtained from this substance or from similar substances.

12.1. Toxicity

Aquatic Toxicity:	Non toxic. The substance is highly insoluble in water and the substance is unlikely to cross biological membranes. No adverse ecological effects are known.
Terrestrial Toxicity:	Earthworm reproduction study (OECD 222), NOAEC for body weight reduction 1000 mg/kg soil; NOAEC for reproduction 3200 mg/kg soil. Non toxic in soil.

12.2. Persistence and degradability

Not expected to degrade

12.3. Bioaccumulative potential

Not expected due to physicochemical properties of the substance.

12.4. Mobility in soil

Mobility: Not expected to migrate. Insoluble.

12.5. Results of PBT and vPvB assessment

This substance does not fulfill the criteria for PBT or vPvB.

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 SDS. 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.

List of Wastes Code: Waste hierarchy to be followed (Directive 2008/98/EC on waste, article 4)

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

This activated carbon product is made by a steam activation process.

Not classified as dangerous in the meaning of transport regulations.

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

Germany Water hazard class (WGK): nwg (not water endangering) WGK ID Nr.: 801

Swiss Poison class:
Not determined

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	Complies
NZIoC - New Zealand Inventory of Chemicals	Complies
TCSI - Taiwan Chemical Substance Inventory	Complies

15.2. Chemical safety assessment

EU Chemical Safety Assessment: A Chemical Safety Assessment has been carried out for this substance.

16. OTHER INFORMATION

Cosmetic Use:
International Nomenclature of Cosmetic Ingredients (INCI) name: CHARCOAL POWDER

Contacts:

See Section 1.

Disclaimer:
The information set forth is based on information that Cabot Corporation believes to be accurate. No warranty, expressed or implied, is intended. The information is provided solely for your information and consideration and Cabot assumes no legal responsibility for use or reliance thereon. In the event of a discrepancy between the information on the non-English document and its English counterpart, the English version shall supersede.

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End of Safety Data Sheet