



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)
Canada Hazardous Products Regulations (SOR/2015-17)

Revision date 2-Jan-2023

Revision Number 5

1. Identification

Product identifier

Product Names

DARCO® FGD	NORIT® A SPECIAL E 153	NORIT® IMPART 280	NORIT® SX 1
DARCO® FGL	NORIT® A SUPRA		NORIT® SX 1 G
DARCO® FM-1	NORIT® A SUPRA EUR	NORIT® PAC 20BC	NORIT® SX 1 G CAT
DARCO® FP-1	NORIT® A SUPRA USP	NORIT® PAC 20BF	NORIT® SX 2
	NORIT® A ULTRA E 153	NORIT® PAC 20R	NORIT® SX PLUS
DARCO® G 60		NORIT® PAC 20RZ	NORIT® SX PLUS F CAT
DARCO® GFP	NORIT® B280FF	NORIT® PAC 200	NORIT® SX PLUS LC
DARCO® GRO-SAFE	NORIT® B SUPRA EUR	NORIT® PAC 200 C	NORIT® SX PLUS CAT
	NORIT® B SUPRA USP	NORIT® PAC 900	NORIT® SX SUPER
DARCO® HG	NORIT® B TEST EUR	NORIT® PAC BC	NORIT® SX SUPER E 153
DARCO® Hg-BD	NORIT® B TEST USP	NORIT® PN 2	NORIT® SX SUPER S
DARCO® Hg-H			NORIT® SX ULTRA
DARCO® Hg-HR	NORIT® C EXTRA USP	NORIT® SA 2	NORIT® SX ULTRA CAT
		NORIT® SA 4	
DARCO® S-51	NORIT® D 10	NORIT® SA 4 PAH	NORIT® VETERINAIR
DARCO® S-51A	NORIT® D ULTRA	NORIT® SA 4 PAH-HF	
DARCO® S-51FF	NORIT® DRK 1	NORIT® SA 5 D	NORIT® W28
DARCO® S-51H	NORIT® DX 1	NORIT® SA 5 PAH HF	NORIT® W35
DARCO® S-51HF	NORIT® DX 10	NORIT® SA PLUS	NORIT® W52
	NORIT® DX ULTRA	NORIT® SA SUPER D	
HYDRODARCO® A		NORIT® SA SUPER DD	NORIT® ZN 2
HYDRODARCO® B	NORIT® E SUPRA USP	NORIT® SA SUPER	
HYDRODARCO® BSP		NORIT® SA UF	
HYDRODARCO® C	NORIT® G 60	NORIT® SA ULTRA PAH	
HYDRODARCO® DXE	NORIT® GH	NORIT® SAE SUPER	
HYDRODARCO® FX	NORIT® GSX		
HYDRODARCO® LA	NORIT® GSX CAT	NORIT® SoilPure	
HYDRODARCO® LC			
HYDRODARCO® LD	NORIT® HX ULTRA		
HYDRODARCO® R - FX			
HYDRODARCO® S			
HYDRODARCO® W			

Other means of identification

Product Group

Steam Activated Carbon Powder; S-PAC

Synonyms

Activated carbon

Other information

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

Recommended use of the chemical and restrictions on use

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

Restrictions on use None known.

Details of the supplier of the safety data sheet

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United States
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Emergency telephone number

Emergency Telephone US: CHEMTREC : 1-800-424-9300 or +1-703-527-3887
International CHEMTREC: +1 703-741-5970 or +1-703-527-3887

2. Hazard(s) identification**Classification**

Combustible dust	-
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Label elements**Signal word**

Warning

Hazard statements

May form combustible dust concentrations in air

Precautionary Statements - Prevention

Keep away from all ignition sources including heat, sparks and flame
Prevent dust accumulations to minimize explosion hazard

Other information

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 generation of dust. 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.

May cause mechanical irritation. Dust may be irritating to respiratory tract.

3. Composition/information on ingredients

Substance

Synonyms Activated carbon

Chemical name	CAS No	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Activated Carbon	7440-44-0	100	-	-

4. First-aid measures

Description of first aid measures

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.
Eye contact	In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.
Skin contact	Wash skin with soap and water. Get medical attention if symptoms occur.
Ingestion	Do NOT induce vomiting. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Symptoms See Section 11 for additional Toxicological Information.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media	Use foam, carbon dioxide (CO ₂), 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.
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, Carbon dioxide (CO₂)

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge Dust can form an explosive mixture with air. Avoid generation of dust. 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. Ground and bond containers when transferring material.

Special protective equipment and precautions for fire-fighters In case of fire: Wear self-contained breathing apparatus. Use personal protection equipment.

6. Accidental release measures**Personal precautions, protective equipment and emergency procedures**

Personal precautions Avoid generation of dust. Ensure adequate ventilation. Use personal protective equipment as required. See section 8.

Other information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions No special environmental measures are necessary. Local authorities should be advised if significant spillages cannot be contained.

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 labeled 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.

7. Handling and storage**Precautions for safe handling**

Advice on safe handling Avoid contact with skin and eyes. Avoid generation of dust. 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 can form an explosive mixture with 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.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat. Eliminate 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.

8. Exposure controls/personal protection

Control parameters

Exposure Limits Exposure limits for components or similar components are stated below.

Chemical name	Quartz (respirable) 14808-60-7
ACGIH TLV	TWA: 0.025 mg/m ³ respirable particulate matter
OSHA PEL	TWA: 50 µg/m ³ (vacated) TWA: 0.1 mg/m ³ respirable dust
Alberta	TWA: 0.025 mg/m ³ respirable particulate
British Columbia	TWA: 0.025 mg/m ³ respirable
Ontario	TWA: 0.10 mg/m ³ respirable fraction
Quebec	TWA: 0.1 mg/m ³ respirable dust
Chemical name	Dust, or particulates not otherwise specified RR-00072-6
ACGIH TLV	TWA: 10 mg/m ³ inhalable particles, recommended TWA: 3 mg/m ³ respirable particles, recommended
OSHA PEL	TWA: 15 mg/m ³ total dust; 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust; 5 mg/m ³ respirable fraction
Alberta	TWA: 10 mg/m ³ total; 3 mg/m ³ respirable
British Columbia	TWA: 10 mg/m ³ total dust; 3 mg/m ³ respirable fraction
Ontario	TWA: 10 mg/m ³ inhalable fraction; 3 mg/m ³ respirable fraction
Quebec	TWA: 10 mg/m ³ total dust

Appropriate engineering controls

Engineering controls Ensure adequate ventilation to maintain exposures below occupational limits. Provide

appropriate exhaust ventilation at machinery and at places where vapors from hot product or dust can be generated. Ensure that eyewash stations and safety showers are close to the workstation location.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles).
Hand protection	Wear suitable gloves.
Skin and body protection	Wear suitable protective clothing. Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace.
Respiratory protection	Approved respirator may be necessary if local exhaust ventilation is not adequate.
Environmental exposure controls	No special environmental measures are necessary. Local authorities should be advised if significant spillages cannot be contained.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

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

Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder
Color	Black
Odor	Generally odorless. May produce slight sulfur smell when wet.
Odor threshold	Not applicable

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH		Not applicable
Melting point / freezing point		Not applicable
Boiling point / boiling range		Not applicable
Flash point		Not applicable
Evaporation rate		Not applicable
Flammability (solid, gas)	Not flammable	
Flammability Limit in Air		Not applicable
Vapor pressure		Not applicable
Relative vapor density		Not applicable
Relative density		No data available
Water solubility	insoluble	@ 20 °C, OECD 105
Solubility in other solvents		Not applicable
Partition coefficient		Not applicable
Autoignition temperature		No data available
Decomposition temperature		Not applicable
Kinematic viscosity		Not applicable
Dynamic viscosity		Not applicable

Other information

Minimum Explosive Conc.	20 g/m ³	ASTM E-1515
Minimum Ignition Temperature	480 °C	ASTM E-1491

Minimum Ignition Energy	> 500 mJ	ASTM E-2019 and IEC 61241-2-3
Maximum Pressure Rise	8 bar	ASTM E-1226
Maximum Rate of Pressure Rise	465 bar/sec	ASTM E-1226
K _{st}	126 bar.m/s	ASTM E-1226
Explosive properties	Dust may form explosible mixture in air, Dust explosion category: ST 1	
Oxidizing properties	Not applicable	
Bulk density	10 - 40 lbs/ft ³	

10. Stability and reactivity

Reactivity	May react exothermically upon contact with strong oxidizers.
Chemical stability	Stable under normal conditions. Stable under recommended storage conditions.
Possibility of hazardous reactions	None under normal processing.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	dust formation. Keep away from heat. Eliminate sources of ignition. 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.
Incompatible materials	Strong oxidizing agents, Strong acids
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.

Acute toxicity

Oral LD50	> 2000 mg/kg (rat); OECD 423.
Dermal LD50	Absorption highly unlikely, no health effects known.
Inhalation LC50	> 8.5 mg/l (rat, 1 hr); OECD 403.
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.
Respiratory or skin sensitization	Not classified. Not sensitizing based on Local Lymph Node Assay (OECD 429).
Germ cell 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. However, these warnings refer to crystalline silica dust and not to naturally occurring bound crystalline silica in solid activated carbon. This product contains <1% respirable crystalline silica. Therefore, Norit has not classified this product as a carcinogen in accordance with the US OSHA Hazard Communication Standard (29 CFR §1910.1200).

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.

Target organ effects

Lungs, Eyes, Skin

Aspiration hazard

Based on industrial experience and available data, no aspiration hazard is expected.

Other adverse effects

No information available.

12. Ecological information

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

Ecotoxicity

Non toxic. The substance is highly insoluble in water and the substance is unlikely to cross biological membranes. No adverse ecological effects are known.

Persistence and degradability

Not expected to degrade.

Bioaccumulation

Not expected due to physicochemical properties of the substance.

Mobility

Not expected to migrate. Insoluble.

Other adverse effects

No information available.

13. Disposal considerations**Waste treatment methods****Waste from residues/unused products**

Activated carbon, in its original state, is not a hazardous material or hazardous waste. Follow applicable regulations for waste disposal.

Spent (used) activated carbon may be classified as a hazardous waste depending upon its use, the substance(s) adsorbed, and how it is ultimately managed. Follow applicable regulations for disposal.

Recycling (reactivation) may be a viable alternative to disposal. Dust formation from residues in packaging should be avoided and suitable worker protection assured. Store used packaging in enclosed receptacles.

Contaminated packaging

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable.

US EPA Waste Number

Unused product is not a hazardous waste under U.S. RCRA, 40 CFR 261
Spent (used) product may be hazardous based on the substance adsorbed

14. Transport information

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

DOT	Not regulated
TDG	Not regulated
MEX	Not regulated
ICAO (air)	Not regulated
IATA	Not regulated
IMDG	Not regulated
RID	Not regulated
ADR	Not regulated
ADN	Not regulated

15. Regulatory information

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

International Inventories

TSCA Complies

Chemical name	CAS No	US TSCA Inventory listing	US TSCA inactive/active designation
Activated Carbon	7440-44-0	Present	Active

DSL/NDL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies
TCSI	Complies
NZIoC	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

TCSI - Taiwan Chemical Substance Inventory

NZIoC - New Zealand Inventory of Chemicals

US Federal Regulations

TSCA Section 12(b) Export Regulations

This product does not contain any components that are subject to TSCA 12(b) Export Notification.

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

Clean Air Act Amendments of 1990 (CAA, Section 112, 40 CFR 82)

This product does not contain any components listed as a Hazardous Air Pollutant, Flammable Substance, Toxic Substance, or Class 1 or 2 Ozone Depletor.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65

- This product contains the following Proposition 65 chemicals:
- "Silica, crystalline (airborne particles of respirable size)". Activated carbon, which is manufactured from a naturally occurring raw material(s), contains a low level of crystalline silica. Please note that all listing qualifiers (airborne and respirable size (10 micrometers or less in diameter)) must be met for the crystalline silica in this product to be considered a Proposition 65 substance.
- Certain metals, including arsenic, cadmium, lead, mercury, or nickel, may be present at low concentrations on and/or in activated carbon and are California Proposition 65 listed substances.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Quartz (respirable) 14808-60-7	X	X	X

16. Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 EPA (Environmental Protection Agency)
 Acute Exposure Guideline Level(s) (AEGL(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 National Institute of Technology and Evaluation (NITE)
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 National Library of Medicine's PubMed database (NLM PUBMED)
 National Toxicology Program (NTP)
 New Zealand's Chemical Classification and Information Database (CCID)
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program
 Organization for Economic Co-operation and Development Screening Information Data Set
 World Health Organization

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End of Safety Data Sheet