Safety Data Sheet

according to Regulation (EC) No. 1907/2006

a) HOK® - Medium b) HOK® - Pulverized c) HOK® - Super

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

1.1. Product identifier

a) HOK® - Medium b) HOK® - Pulverized c) HOK® - Super

Further trade names

activated carbon, activated coke

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

Use of the substance/mixture

adsorbent
filter material

Uses advised against

In case of doubt please contact our responsible department.

1.3. Details of the supplier of the safety data sheet

Manufacturer

Company name:	RWE Power AG Lignite Upgrading	
Street:	Stüttgenweg 2	
Place:	D-50935 Cologne	
Telephone:	+49 (0)221 480 0	Telefax: +49 (0)221 480 1369
Contact person:	Andreas Kuphal	Telephone: +49 (0)221 480 72105
e-mail:	VLQMVeredlung@RWE.com	
Internet:	www.rwe.com / www.HOK.de	
Responsible Department:	Rheinbraun Brennstoff GmbH Abt. Industrievertrieb Tel: +49 (0)221 480 22274 Fax: +49 (0)221 480 1369 RBB_IND@RWE.com	

Supplier

Company name:	Rheinbraun Brennstoff GmbH
Street:	Stüttgenweg 2
Place:	D-50935 Cologne

1.4. Emergency telephone:

+49 (0) 221 480 22274 (8-17h)
+49 (0) 172 2424379 (17-8h)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

This substance is not classified as dangerous according to Directive 67/548/EEC.

GHS classification

This substance is not classified as dangerous according to Regulation (EC) No. 1272/2008.

2.2. Label elements

Additional advice on labelling

The product is not subject to labelling.

2.3. Other hazards

Possible development of an explosive dust/air mixture. The product is not hazardous to health or environment when used as intended.

SECTION 3: Composition/information on ingredients

3.1. Substances

Chemical characterization (reference values)

a) HOK® - Medium

Water:	0,5 % w/w
Ash:	10,0 % w/w
Volatile Content:	3,0 % w/w
C-fix:	86,5 % w/w
Granulation:	<1,5 mm

b) HOK® - Pulverized

Water:	0,5 % w/w
Ash:	10,0 % w/w
Volatile Content:	3,0 % w/w
C-fix:	86,5 % w/w
Granulation:	<0,4 mm

c) HOK® - Super

Water:	0,5 % w/w
Ash:	10,0 % w/w
Volatile Content:	3,0 % w/w
C-fix:	86,5 % w/w
Granulation:	<0,1 mm

The proportion of calcium oxide (C, R34; Skin corrosion 1B; H314) is below 1.5%. According to expertise, this does not lead to classification according to EU-GHS.

Hazardous components

EC No.	Chemical name	Quantity
CAS No.	Classification	
Index No.	GHS classification	
REACH No.		
266-010-4	Coke (contains calcium oxide)	100 %
65996-77-2		

Full text of R- and H-phrases: see section 16.

Further Information

According to Article 2, paragraph 7 b of Regulation 1907/2006 of the European Parliament and the Council - Registration, Evaluation and Authorisation of Chemicals - (REACH), coke need not be registered.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

First-aider: Pay attention to self-protection!

After inhalation

Provide fresh air.
Not harmful; also see section 11.

After contact with skin

After contact with skin, wash immediately with: Water. If necessary, change contaminated clothing.

In case of skin irritation, seek medical treatment.

After contact with eyes

Rinse immediately and thoroughly with eye wash or water. In case of troubles or persistent symptoms, consult an ophthalmologist.

After ingestion

If swallowed drink water. Seek medical attention if problems persist.

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

Skin contact may cause skin irritation. The dust is irritating to the conjunctiva.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Extinguishing materials should be selected according to the surroundings. In the closed silo the fire is extinguished by: Hermetical closure. Outside the closed silo: Water with wetting agent (only use spray jet), fire foam (only use medium expansion foam), cover with humid soil, sand or similar material.

Extinguishing media which must not be used for safety reasons

Fire-extinguishing equipment with a high extinguishing agent output. Water in the form of a full jet.

5.2. Special hazards arising from the substance or mixture

If there are whirl ups and sufficient ignition energy, flash fires or explosions may occur.

5.3. Advice for firefighters

If necessary use self-contained breathing apparatus and protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid ignition sources and whirl-ups.

6.2. Environmental precautions

none

6.3. Methods and material for containment and cleaning up

Remove material mechanically. Clean polluted areas with: Water. If necessary remove material with explosion-proof suction system.

6.4. Reference to other sections

Treat the collected material according to the section on waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Store product only in closed systems.

Advice on protection against fire and explosion

Prepare explosion protection document according to operating safety ordinance. Remove accumulations outside the system immediately.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Storage temperature must not exceed 80℃. Silo must allow hermetical closure. Avoid ignition sources. Use only approved equipment in the defined explosion protection zones. Silo components have to be earthed and connected conductively.

Advice on storage compatibility

Do not store near heat sources and easily flammable materials.

Further information on storage conditions

No smoking, naked light or fire near the silo and loading facilities.

Storageclass (VCI, D): not applicable

7.3. Specific end use(s)

adsorbent, filter material

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Additional advice on limit values

Occupational exposure limits (Germany, TRGS 900): 3 mg/m³ alveolar dust portion (gen. dust threshold value) / 10 mg/m³ respirable dust portion (gen. dust threshold value)

8.2. Exposure controls

Protective and hygiene measures

Avoid dust development.
If necessary, change contaminated clothing. Wash hands before breaks and at the end of work. When using do not eat or drink.

Respiratory protection

Depending on dust development: Dust protecting mask (DIN EN 140) level P1.

Hand protection

Nitrile gloves or combined leather/cotton gloves. Type of chemical protective gloves to choose depends on the concentration and quantity of dangerous substances as well as on work place specifications. Use skin protection cream in case of longer dust exposition.

Eye protection

In case of dust development: Dust protection goggles.

Environmental exposure controls

Clean conveying air, fluidization air and leakage air by using appropriate filters.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	solid (dustlike, flowable)
Colour:	black
Odour:	no specific odour

		Test method
pH-Value:	alkaline in the supernatant of a 10% solution	

Changes in the physical state

Melting point:	No data available
Boiling point:	not applicable
Flash point:	not applicable

Explosive properties

explosive in a mixture with air
Dust explosion group: St 1 according to VDI 2263

Auto-ignition temperature

Solid: not self-heating according to ADR / RID

Oxidizing properties

none

Vapour pressure:	not applicable
Density:	not applicable
Water solubility:	insoluble
Viscosity / dynamic:	not applicable
Vapour density:	not applicable
Solvent separation test:	not applicable
Solvent content:	not applicable

9.2. Other information

a) HOK® - Medium
bulk density: ca. 0,59 g/cm³
ignition point: >850℃
lower explosion limit: 250 g/m³
flammable solid substance (fire class A)
Combustion behavior according to VDI 2263 at 100 ℃: BZ 2
(brief ignition and rapid extinction).
not easily flammable according to VDI 2263

b) HOK® - Pulverized
bulk density: ca. 0,55 g/cm³
ignition point: 560℃
lower explosion limit: 60 g/m³
flammable solid substance (fire class A)
Combustion behavior according to VDI 2263 at 100 ℃: BZ 2
(brief ignition and rapid extinction).
not easily flammable according to VDI 2263

c) HOK® - Super
bulk density: ca. 0,55 g/cm³
ignition point: 590℃
lower explosion limit: 60 g/m³
flammable solid substance (fire class A)
Combustion behavior according to VDI 2263 at 100°C: BZ 3
(local burning or glowing with at most marginal expansion).
not easily flammable according to VDI 2263

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactivity under regular conditions.

10.2. Chemical stability

The product is stable under regular conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions to be expected if used properly.

10.4. Conditions to avoid

To avoid self-ignition, prevent air leakage.

10.5. Incompatible materials

none known

10.6. Hazardous decomposition products

none known

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicocinetics, metabolism and distribution

Due to its chemical nature, dust is not metabolized to toxic metabolites in significant amounts.

Acute toxicity

The product is non-toxic. The main portion of the dust is too coarse to enter the lungs. Only if there are high dust concentrations, may the fine dust portion that is able to enter the lungs exceed the general dust exposure limit (see section 8.1). In this case, the purification mechanisms of the lungs might be overstrained. The dust can irritate the mucous membranes of the upper respiratory tract.

Irritation and corrosivity

Decades of experience gained by the manufacturer in handling the product have shown only weak irritant effects. Skin irritation can occur, especially with sensitive skin types or sweaty skin. The dust is irritating to the conjunctiva.

Sensitizing effects

Decades of experience gained by the manufacturer in handling the product have shown no sensitizing effects.

Severe effects after repeated or prolonged exposure

Without taking respiratory protection measures (e.g. personal protection equipment according to section 8.2), alveolar particles inhaled with air in the course of years or decades may cause chronic obstructive respiratory diseases if the general dust exposure limits (see section 8.1) are exceeded.

Carcinogenic/mutagenic/toxic effects for reproduction

Practical handling of the products for decades monitored by the occupational health department has not given any indication of cancerogenic, mutagenic or adverse effects on fertility.

Empirical data on effects on humans

Due to its nature, the aforementioned product has only weak skin-irritating effects. The inhaled dust has no cancerogenic, mutagenic, fibrogenic, allergic or chemo-toxic effects.

SECTION 12: Ecological information

12.1. Toxicity

Not applicable since the product is not soluble in water.

12.2. Persistence and degradability

Irrelevant. The product can be separated in mechanical sewage treatment plants.

12.3. Bioaccumulative potential

no bioaccumulation potential

12.4. Mobility in soil

The product does not endanger the ground water (see section 15.1).

12.5. Results of PBT and vPvB assessment

This substance does not meet the criteria for classification as PBT or vPvB.

12.6. Other adverse effects

none

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Recycling or dumping.
Note transport regulations.
According to the European Waste Catalogue (EWC), allocation of waste identity numbers/waste descriptions must be carried out in a specific way for every industry and process.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number: -

14.2. UN proper shipping name: -

14.3. Transport hazard class(es): -

14.4. Packing group: -

Other applicable information (land transport)

Not restricted

Marine transport

14.1. UN number: -

14.2. UN proper shipping name: -

14.3. Transport hazard class(es): -

14.4. Packing group: -

Other applicable information (marine transport)

Not restricted

Air transport

14.1. UN/ID number: -

14.2. UN proper shipping name: -

14.3. Transport hazard class(es): -

14.4. Packing group: -

Other applicable information (air transport)

Not restricted

14.5. Environmental hazards

Dangerous for the environment: no

14.6. Special precautions for user

see section 7

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Distribution may only take place if packaging is legally authorized and appropriate.

SECTION 15: Regulatory information

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

EU regulatory information

Additional information

Consider the according regulations.

National regulatory information

Water contaminating class (D): - - not water contaminating

15.2. Chemical Safety Assessment

For this substance a chemical safety assessment is not required.

SECTION 16: Other information

Changes

Version 1,00 - First creation - 01.10.2007
Version 1,01 - Adaption and completion of the SDS according to regulation 453/2010 - 22.02.2011

Further Information

The information provided in this safety data sheet should describe the product with regard to the necessary safety precautions. It is no contractual guarantee of quality characteristics of the product discussed and reflects the level of knowledge of the manufacturer.

Further information:
- Recommendations for dealing with lignite coke.
- Expertise on the usability of a granular activated carbon for treatment of water intended for human consumption