

Informace o bezpečnosti produktu

Obchodní název výrobku:: KG 30.2

Výrobek c.: 6377

Datum revize: 09.04.2021

verze: 03 /cs



Nahrazuje verzi z: 23.02.2016

datum tisku: 09.04.2021

1. Identifikace látky/směsi společnosti/podniku

1.1 Identifikátor výrobku

Obchodní název výrobku KG 30.2
REACH-registrační číslo 01-2119488894-16-0000

1.2 Příslušná určená použití látky nebo směsi a nedoporučená použití

Relevantní identifikovaná použití Tepelné zpracování oceli.
Jen k průmyslovému použití.
Doporučená omezení Není známo.

1.3 Podrobné údaje o dodavateli bezpečnostního listu

adresa HEF-Durferrit s.r.o.
Lomená 66
25070 Panenské Břežany
telefon: +420 724 913 837
fax: +420 226 013 275
E-mail: info@hef-durferrit.cz
Odpovědná osoba Product-Safety@hef-durferrit.com

1.4 Telefonní číslo pro naléhavé situace

Telefonní číslo pro nouzové volání výrobce: +49 6132-84463
Toxikologické informační středisko. +420 224 91 92 93

2. Identifikace nebezpečnosti

2.1 Klasifikace látky nebo

směsi Produkt není klasifikován jako nebezpečný podle nařízení (ES) č. 1272/2008 (CLP).
Klasifikace podle předpisu (ES) č. 1272/2008

2.2 Prvky označení

Označení podle ustanovení (EG) č. 1272/2008 (CLP) Dle nařízení (ES) č. 1272/2008 [CLP] se produkt nemusí označovat.

2.3 Další nebezpečnost

Bezpečnostní opatření pro ochranu osob a životního prostředí Styk s horkým produktem způsobí tepelné popáleniny.
Za určitých okolností (např. vzdušná vlhkost) se může materiál sám od sebe zahřát. Zvýšení vlhkosti napomáhá samo ohřátí.

3. Složení/informace o složkách

3.2 Směsi

Chemická charakteristika Granulát na bázi uhlíku.

Nebezpečné složky

obsažená látka		klasifikace 1272/2008/ES	koncentrace
Aktivní uhlí	Číslo CAS: 7440-44-0 C. EC: 931-328-0 Číslo REACH: 01-2119488894-16-0000		>= 94,0 hmot. %

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4. Pokyny pro první pomoc

4.1 Popis první pomoci

* Všeobecné pokyny

Vlastní ochrana osoby poskytující první pomoc.

Při vdechnutí

Jděte na čerstvý vzduch. Pokud se vyvine a přetrvává podráždění, volejte lékaře.

Při styku s kůží

Kontaminovaný oděv svlékněte. Omyjte vodou a mýdlem. Pokud podráždění kůže nebo vyrážka přetrvává, vyhledejte lékařskou pomoc/radu.

Při styku s očima

Zvedněte oční víčka a vyplachujte oči velkým množstvím vody nejméně 15 minut. Zajistěte lékařské ošetření.

Při požití

Vyplachujte ústa a dejte vypít velké množství vody. Při přetrvávajících potížích přivolejte lékaře.

* Pokyny pro lékaře

Symptomatické ošetření.

4.2 Nejdůležitější akutní a opožděné symptomy a účinky

Symptomy

U citlivých osob může dojít k podráždění očí anebo pokožky.

5. Opatření prohašení požáru

5.1 Hasiva

Vhodné hasící prostředky

Sprchový proud vody, Pěna, Suchý prášek, Hasicí prášek
Opatření při požáru mají odpovídat okolním podmínkám.

Hasící prostředky nevhodné z bezpečnostních důvodů

V kalírnách: Plný proud vody. Vodní proud se nesmí dostat do roztavené soli!!

5.2 Zvláštní nebezpečnost vyplývající z látky nebo směsi

* Zvláštní nebezpečí při expozici, vyvolané látkou nebo přípravkem jako takovým, produkty jejich spalování nebo uvolňovanými plyny

Za určitých okolností (např. vzdušná vlhkost) se může materiál sám od sebe zahřát. Zvýšení vlhkosti napomáhá samo ohřátí.
Při požáru mohou vznikat nebezpečné rozkladné produkty jako: Oxid uhelnatý (CO), Oxid uhličitý (CO₂)
Při hoření může uvolňovat nebezpečné výpary.

5.3 Pokyny pro hasiče

Zvláštní ochranná výstroj při hasebním zásahu

Nezůstávejte v ohrožené oblasti bez dýchacího přístroje s vlastním okruhem. Zabraňte kontaktu s pokožkou, držte se v patřičné vzdálenosti a noste ochranné pracovní oděvy.

6. Opatření v případě náhodného úniku

6.1 Opatření na ochranu osob, ochranné prostředky a nouzové postupy

* Osobní ochrana

Zabraňte vznikání prachu. Nevdechujte prach. Zamezte kontaktu s látkou. Zajistěte dostatečné větrání, zvláště v uzavřených prostorách. Používejte vhodné ochranné prostředky.

6.2 Opatření na ochranu životního prostředí

Opatření k ochraně životního prostředí

Nenechejte vniknout do povrchových vod nebo kanalizace.

6.3 Metody a materiál pro omezení úniku a pro čištění

* Způsoby čištění

Je nutno vyloučit vznik prachu. Zameřte, odsajte uniknuvší materiál a přeneste do vhodného kontejneru k zneškodnění. Není-li možná recyklace, zlikvidujte v souladu s místními předpisy. Po očištění spláchněte zbytky vodou.

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6.4 Odkaz na jiné oddíly

Odkaz na jiné odstavce

Osobní ochrana viz sekce 8.
Pokyny k likvidaci: viz oddíl 13

7.Zacházení askladování

7.1 Opatření pro bezpečné zacházení

* Pokyny pro bezpečné zacházení

Je nutno vyloučit vznik prachu. Nevdechujte prach. Zamezte kontaktu s látkou. Neponechávejte v blízkosti plamenů, horkých povrchů a zápalných zdrojů. Chraňte před vlhkostí. Zajistěte dostatečné větrání, zvláště v uzavřených prostorách.
V případě nedostatečného větrání používejte vybavení pro ochranu dýchacích cest. Používejte vhodné ochranné prostředky. Osobní ochrana viz sekce 8. Nejezte, nepijte a nekuřte při používání. Před přestávkou a po práci umýt ruce.

* Pokyny pro ochranu před požárem a výbuchem

Zápalné látky. Uchovávejte mimo dosah zdrojů zapálení. Zabraňte vznikání prachu.

7.2 Podmínky pro bezpečné skladování látek a směsí včetně neslučitelných látek a směsí

Požadavky na skladovací prostory a nádrže

Uchovávejte v souladu s místními předpisy. Je třeba dbát na úřední povolení a předpisy pro skladování.

Materiály nevhodné k uložení do kontejnerů

Není známo.

* Pokyny pro společné skladování

Neskladujte společně s oxidačními a samozápalnými produkty. Nesnáší se se silnými kyselinami a oxidačními činidly.

* Pokyny ke skladování

Skladujte v původních obalech. Skladujte na dobře větraném místě. Skladujte na suchém místě. Chránit před vysokými teplotami a přímým slunečním zářením. Chraňte před vlhkostí. Uchovávat mimo dosah tepelných zdrojů (např. horkých ploch), jisker a otevřeného ohně.

* TRGS 510

Granulát. V suchém stavu: 11 – Hořlavé pevné látky, které nelze přiřadit k žádné z výše uvedených skladovacích tříd

* Doporučená skladovací teplota

Chránit před vysokými teplotami a přímým slunečním zářením.

8.Omezování expozice/osobníochranné prostředky

8.1 Kontrolní parametry

Aktivní uhlí

DNEL

Hodnota	Skupina	Postup expozice	Frekvence expozice	Zdroj
1,84 mg/mí	Pracovníci	Vdechování	DNEL dlouhodobé inhalativní (lokálně)	151
0,9 mg/mí	Spotřebitelé	Vdechování	DNEL dlouhodobé inhalativní (lokálně)	151

Zdroj: 151 – ECHA

PNEC

Hodnota	Postup expozice	Zdroj
10 mg/kg	Půda	151

Zdroj: 151 – ECHA

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8.2 Omezování expozice

Ochrana dýchacích orgánů	Při nedostatečném větrání použijte dýchací přístroj. Doporučený typ filtru: Polomaska s filtrem proti mechanickým částicím P2 (evropská norma EN 143). například FFP2
Ochrana rukou	Ochranné rukavice doporučeno: například Kožené rukavice, Pryžové rukavice
Poznámky:	Při manipulaci s horkým materiálem použijte tepelně izolující rukavice. Pracovní oděv nesmí být zhotoven z materiálu, který při požáru vytváří nebezpečnou taveninu.
Ochrana očí	V prašném prostředí noste ochranné brýle. Ochranné brýle s bočními kryty vyhovující normě EN166.
Ochrana kůže a těla	Pracovní oděv s dlouhými rukávy
Všeobecná bezpečnostní a hygienická opatření	V místě použití by mělo být zakázáno kouřit, jíst a pít. Před pracovní přestávkou a po skončení práce si umyjte ruce.
Technická opatření	V pracovních prostorách je nutno zajistit dostatečnou výměnu vzduchu a/nebo odsávání.

9. Fyzikální a chemické vlastnosti

9.1 Informace o základních fyzikálních a chemických vlastnostech

Skupenství	pevný
Vzhled	granulát
Barva	černý
Zápach	bez zápachu
Prahová hodnota pro vnímání zápachu	data neudána
pH	asi 9 – 11 (rozmíchejte ve vodě)
* Bod tání [°C] / Bod tuhnutí [°C]	> 1000
* počáteční bod varu [°C] a rozmezí bodu varu [°C]	> 1000
* Bod vzplanutí [°C]	Nepoužitelný.
Rychlost odpařování [kg/(s*m2)]	data neudána
* Hořlavost (pevné látky, plyny)	Hořlavý
Tlak par [kPa]	data neudána
Hustota par	Žádné údaje k dispozici
* Hustota [g/cm3]	asi 1,45 – 1,6
* Rozpustnost ve vodě [g/l]	nerozpustná látka (hodnota pH 6,8; 20 °C)
Způsob měření:	OECD 105
* Rozdělovací koeficient n-oktanol/voda (log P O/W)	data neudána. Produkt / substance je anorganický.
Teplota samovznícení	Zvýšení vlhkosti napomáhá samo ohřátí.
Teplota rozkladu [°C]	data neudána
* Dynamická viskozita [kg/(m*s)]	Nepoužitelný.
* výbušné vlastnosti	Granulát: Nevýbušný
Oxidační vlastnosti	Nemá zápalné (oxidační) účinky.

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9.2 Další informace

* Teplota vznícení [°C] asi 350 – 450

* Synná měrná hmotnost [kg/m³] asi 550 – 600

10. Stálost a reaktivita

10.1 Reaktivita

* Reaktivita Při řádné manipulaci a skladování nedochází k žádným nebezpečným reakcím.

10.2 Chemická stabilita

Chemická stabilita Stabilní za doporučených skladovacích podmínek.

10.3 Možnost nebezpečných reakcí

Nebezpečné reakce Za určitých okolností (např. vzdušná vlhkost) se může materiál sám od sebe zahřát. Zvýšení vlhkosti napomáhá samo ohřátí.
Exotermní reakce s: Oxidační činidla (silná)
Rozkládá se při reakci se silnými kyselinami.

10.4 Podmínky, kterým je třeba zabránit

Nutno zabránit těmto podmínkám Extrémní teploty a přímé sluneční záření.
Vystavení vlivu vlhkosti.

10.5 Neslučitelné materiály

Nutno zabránit styku s těmito látkami Oxidující a samozápalné výrobky
Silné kyseliny a oxidační prostředky

10.6 Nebezpečné produkty rozkladu

Nebezpečné produkty rozkladu Oxid uhelnatý (CO), Oxid uhličitý (CO₂)

11. Toxikologické informace

11.1 Informace o toxikologických účincích

Nebezpečné složky

Aktivní uhlí

Orální toxicita [mg/kg]	Testovací kritérium	Druh zkoušky	Způsob měření	Zdroj
>2000	LD50	krysa	OECD 423	151

Zdroj: 151 – ECHA

Dermální toxicita [mg/kg]	Hodnota	Zdroj
-	Žádné údaje k dispozici	151

Zdroj: 151 – ECHA

Inhalativní toxicita [mg/l]	Testovací kritérium	Druh zkoušky	Způsob měření	Zdroj
>8,5	LC50	krysa	OECD 403	151

Zdroj: 151 – ECHA

Dráždivý účinek na kůži Test na podráždění pokožky (králík): Není dráždivý.

Doba expozice: 4 h

Způsob měření: OECD 404

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náznak:	externí bezpečnostní list
Dráždivý účinek na oči	Test na podráždění oči (králík): Není dráždivý.
Způsob měření:	OECD 405
náznak:	externí bezpečnostní list
Senzibilizace	Styk s kůží: nesenzibilizující. Vdechnutí: data neudána. Žádný známý účinek.
* Karcinogenní účinky	data neudána.
* Mutagenita	negativní (bez aktivace látkové výměny).
Poznámky:	externí bezpečnostní list negativní (s aktivací výměny látek).
Poznámky:	externí bezpečnostní list
* Toxicita pro reprodukci	data neudána.
Symptomy	U citlivých osob může dojít k podráždění očí anebo pokožky.
Specifická toxicita pro cílové orgány (jednorázová expozice) [mg/kg]	
Specifické účinky:	data neudána
Specifická toxicita pro cílové orgány (opakovaná expozice) [mg/kg]	
Specifické účinky:	data neudána
Nebezpečnost při vdechnutí	data neudána

12. Ekologické informace

12.1 Toxicita

Nebezpečné složky

Aktivní uhlí

Toxicita pro ryby [mg/l]	Hodnota	Zdroj
-	Žádné údaje k dispozici	151

Zdroj: 151 - ECHA

Toxicita pro Dafnie [mg/l]	Hodnota	Zdroj
-	Žádné údaje k dispozici	151

Zdroj: 151 - ECHA

Toxicita pro řasy [mg/l]	Hodnota	Zdroj
-	Žádné údaje k dispozici	151

Zdroj: 151 - ECHA

NOEC (ryba) [mg/l]	Hodnota	Zdroj
-	Žádné údaje k dispozici	151

Zdroj: 151 - ECHA

NOEC (dafnie) [mg/l]	Hodnota	Zdroj
-	Žádné údaje k dispozici	151

Zdroj: 151 - ECHA

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NOEC (řasa) [mg/l]	Hodnota	Zdroj
-	Žádné údaje k dispozici	151

Zdroj: 151 – ECHA

12.2 Perzistence a rozložitelnost

Biologická rozložitelnost

data neudána. Metody stanovení biologické odbouratelnosti nejsou aplikovatelné pro anorganické látky.

12.3 Bioakumulační potenciál

* Bioakumulace

Bioakumulace je nepravděpodobná.

Biokoncentrační faktor (BCF)

Biokoncentrační faktor (BCF) < 10 (externí bezpečnostní list)

12.4 Mobilita v půdě

Rozložení v životním prostředí

data neudána.

Mobilita

Žádné údaje k dispozici.

12.5 Výsledky posouzení PBT a vPvB

Výsledek zjištění vlastností PBT

Směs neobsahuje látky PBT a vPvB.

12.6 Jiné nepříznivé účinky

Odkaz AOX

Tento produkt neobsahuje podle receptury žádné organicky vázané halogeny (AOX).

13. Pokyny pro odstraňování

13.1 Metody nakládání s odpady

Pokyny pro likvidaci

Nspotřebovaný produkt není nebezpečným odpadem ve smyslu evropského katalogu odpadů.

Podle Evropského katalogu odpadů nejsou kódy odpadů charakteristické pro produkt, nýbrž pro jeho použití. Kódy odpadů by měl přidělovat uživatel na základě použité aplikace výrobku.

Následující kódy odpadů jsou pouze návrhy:

* Katalogové číslo odpadu

06 13 02* Upotřebené aktivní uhlí (kromě odpadu uvedeného pod číslem 06 07 02)

15 02 02* Absorpční činidla, filtrační materiály (včetně olejových filtrů jinak blíže neurčených), čisticí tkaniny a ochranné oděvy znečištěné nebezpečnými látkami

15 02 03 Absorpční činidla, filtrační materiály, čisticí tkaniny a ochranné oděvy neuvedené pod číslem 15 02 02

14. Informace pro přepravu

	* Pozemní doprava ADR/RID	* Námořní přeprava IMDG	Letecká doprava ICAO/IA-TA
14.2 Oficiální (OSN) pojmenování pro přepravu	Bezpečné zboží	Bezpečné zboží	Bezpečné zboží
Poznámky	Balení ≤ 3 m ³	Balení ≤ 3 m ³	

15. Informace o předpisech

15.1 Předpisy týkající se bezpečnosti, zdraví a životního prostředí/specifické právní předpisy týkající se látky nebo směsi

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* Další předpisy

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Směrnice 2012/18/EU o kontrole nebezpečí závažných havárií s přítomností nebezpečných látek [Směrnice Seveso III]: Není relevantní

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15.2 Posouzení chemické bezpečnosti

Posouzení bezpečnosti

Pro tuto látku bylo provedeno posouzení chemické bezpečnosti.

16. Další informace

* Změna vůči poslednímu znění

ODDÍL 3: Složení/ informace o složkách
ODDÍL 4: Pokyny pro první pomoc
ODDÍL 5: Opatření pro hašení požáru
ODDÍL 6: Opatření v případě náhodného úniku
ODDÍL 7: Zacházení a skladování
ODDÍL 8: Omezování expozice/osobní ochranné prostředky
ODDÍL 9: Fyzikální a chemické vlastnosti
ODDÍL 10: Stálost a reaktivita
ODDÍL 11: Toxikologické informace
ODDÍL 12: Ekologické informace
ODDÍL 13: Pokyny pro odstraňování
ODDÍL 14: Informace pro přepravu
ODDÍL 15: Informace o předpisech
ODDÍL 16: Další informace

Zkratky a akronymy

Odvozená hladina bez účinku (DNEC)
Předpokládaná koncentrace bez účinku (PNEC)
NOEC (no observed effect concentration) (NOEC)
Adsorbované organicky vázané halogeny (AOX)
Obsah organické těkavé sloučeniny (VOC)
Evropský katalog odpadů (EAK)
Třída ohrožení vod (WGK)

* Důležité literární údaje a prameny dat

Třídění podle nařízení (ES) č.1272/2008 [CLP]
Bezpečnostní informace dle Nařízení (ES) č. 1907/2006 (REACH), Článek 32
Evropský katalog odpadů

Doporučená omezení

Není známo.

Nepovinný bezpečnostní údaj podle dikce bezpečnostního listu v souladu s Nařízením (ES) č. 1907/2006 (REACH)
Obsažené údaje odpovídají současnému stavu našich znalostí a nejsou proto zárukou určitých vlastností.

Změny oproti poslední verzi jsou označeny s*.

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Annex I: Overview of risk management measures

Trade name: KG 30.2

Extruded carbon

Version: 2.0

~~Up-stream product of water-steam activated carbon~~

Revision date: 11-01-2013

APPENDIX I: OVERVIEW OF RISK MANAGEMENT MEASURES

Included life cycles (overview of uses covered is presented in annex II)

The following life cycle stages are included in this Chemical safety report:

- C_I Manufacture of the substance (IU# C1 through C12). Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling, associated laboratory activities, maintenance and cleaning of equipment
- B_I Formulation (IU# B1 through B15), packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and cleaning of equipment
- A_I Industrial end-use (IU# A1 through A17) as a component in a preparation including transfer from storage, pouring/unloading from drums or containers in batch or continuous operations, including storage, materials transfers, sampling.
- D_P Covers the professional use (DU# D1 through D20) as a component in a preparation including pouring/unloading from bags, drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities.
- E_C Covers general exposures to consumers (DU# E1 through E6, C7 and C8) arising from the use of household products sold as filter products.

Consumer operational conditions and risk management measures

Normal use of AC - HDS in household products sold as filter products is safe under all foreseeable circumstances.

Environmental scenarios

There are no hazards potentially requiring control of risk related to environmental endpoints. This also supports the conclusion that there is no need to assess the indirect exposure of man via the environment through the oral route.

Indirect exposure of humans via the environment

The indirect exposure of man via ambient air (e.g. in the neighborhood of sites where a substance is manufactured or used) is not evaluated although it can not be excluded. In the Chemical Safety Assessment only systemic effects need to be considered. AC - HDS does not cause acute or long-term systemic effects.

Risk management measures applicable for worker scenarios

The risk management measures applicable for worker scenarios are listed in the generic exposure scenarios of Annex II.

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Annex II: List of exposure scenarios covered

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APPENDIX II GENERIC EXPOSURE SCENARIOS & ESTIMATED CONSUMER EXPOSURES

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Table with scaling information

Risk management measure		Assumed effectiveness ¹		Source of effectiveness		
		Inhalatory	Dermal			
Technical Risk management measures						
General ventilation (mechanical)		50%		-	Advanced REACH tool (www.advancedreachtool.com).	
Local exhaust ventilation	PROC 2, 3, 4, 5, 6, 8a, 9, 10, 13, 15, 15, 16, 19, 21, 23, 25	Industrial	Professional	30%	Advanced REACH tool (www.advancedreachtool.com) for the inhalatory effectiveness, the dermal effectiveness is assumed to be 1/3 of the inhalatory effectiveness.	
		90%	80%			
		PROC 7	95%			n.a.
		PROC 8b	95%			80%
		PROC 11, 20	n.a.			80%
		PROC 17, 18	90%			90%
		PROC 22	90%			n.a.
PROC 24	90%	75%				
Laminar flow booth		90%	90%	30%	Advanced REACH tool (www.advancedreachtool.com) for the inhalatory effectiveness, the dermal effectiveness is assumed to be 1/3 of the inhalatory effectiveness.	
Organizational risk management measure, Reduction of duration of exposure						
> 60 and <= 240 minutes per shift		40%		40%	ECETOC TRA (http://www.ecetoc.org/tra) for the inhalatory effectiveness, expert judgment for dermal effectiveness.	
> 15 and <= 60 minutes per shift		80%		80%		
<= 15 minutes per shift		90%		80%		
Operational risk management measure, Concentration of substance in mixture						
> 5% and <= 25%		40%		75%	ECETOC TRA (http://www.ecetoc.org/tra) for the inhalatory effectiveness, expert judgment for dermal effectiveness.	
> 1% and <= 5%		80%		95%		
<= 1%		90%		99%		
Personal protective equipment						
Respirator (Wear a full face respirator conforming to EN140 with Type A / P2 filter or better. APF >20))		95%		n.a.	ECETOC TRA (http://www.ecetoc.org/tra)	
Respirator (Wear a respirator (half face mask) conforming to EN140 with Type A filter / P2 filter or better. APF >10)		90%		n.a.	ECETOC TRA (http://www.ecetoc.org/tra)	

¹ All effectiveness's listed are only valid if the RMM is properly designed, installed (if applicable), used and maintained.

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Table 1 GES Manufacture of Activated Carbon, High Density Skeleton non powdered/wetted

Manufacture of Activated Carbon, High Density Skeleton (IU# C1 through C12). Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling, associated laboratory activities, maintenance and cleaning of equipment		
Based on ECHA Template CSA&IR Part D draft Version 2, combined with the GES Narrative Format		
Section 1	Exposure Scenario Title	
Title	Manufacture of Activated Carbon, High Density Skeleton, non powdered / wetted	
Use Descriptors	Sectors of Use: Industrial (SU 3)	
	Process Categories: PROC 1, PROC2, PROC3, PROC4, PROC8a, PROC 8b, PROC15, PROC 22	
	Environmental Release Categories: ERC 1	
Scenarios covered	NPAC C1 through C12. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling, associated laboratory activities, maintenance and cleaning of equipment	
Section 2	Operational conditions and risk management measures	
Section 2.1	Control of worker exposure	
Product characteristics and operational conditions		
Physical form of product	Solid, low dustiness (OC1)	
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].	
Amounts used	Uses covered ranging from ml up to m ³ s	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]	
Human factors not influenced by risk management	Not applicable	
Other Operational Conditions affecting worker exposure	Assumes activities are at ambient temperature (unless stated differently). [G17]. Indoor (OC8). Outdoor (OC 9).	
Contributing Scenarios	Risk Management Measures	Risk Characterization Ratios (RCR)
	Note: list RMM standard phrases according to the control hierarchy indicated in the ECHA template: 1. Technical measures to prevent release, 2. Technical measures to prevent dispersion, 3. Organizational measures , 4. Personal protection. Phrases between brackets are good practice advice only, beyond REACH Chemical Safety Assessment and may be communicated in Section 5 of the ES or within the main sections of the SDS. Unless stated otherwise all listed measures are required to achieve safe use	
NPAC.C1 : PROC 1 : Handling in closed system, no sampling required e.g. kiln processes, milling, closed mechanic or pneumatic transfer between process equipment, silo	Assumes a good basic standard of occupational hygiene is implemented [G1].	0.003
NPAC.C1w : PROC 1 : Moist or slurry (no dust): Handling in closed system, no sampling required e.g. washing, closed mechanic or hydrolic transfer between process equipment	Assumes a good basic standard of occupational hygiene is implemented [G1].	0.003
NPAC.C2 : PROC 2 : Handling in closed continuous system, sampling required, e.g. closed mechanic or pneumatic transfer between process equipment with sampling	Assumes a good basic standard of occupational hygiene is implemented [G1].	0.003
NPAC.C2w : PROC 2 : Moist or slurry (no dust): Handling in closed continuous system, sampling required, e.g. washing, closed mechanic or hydrolic transfer between process	Assumes a good basic standard of occupational hygiene is implemented [G1].	0.003
NPAC.C3 & NPAC.C3w : PROC 3 : Handling in closed batch system, sampling required e.g. blending, closed mechanic or pneumatic transfer between process equipment with sampling, sampling from silo	Assumes a good basic standard of occupational hygiene is implemented [G1].	0.033
NPAC.C4 : PROC 8a : Coupling and uncoupling of flexible hose	Assumes a good basic standard of occupational hygiene is implemented [G1].	0.167
NPAC.C4w : PROC 4 : Moist or slurry (no dust) : Handling in system with opportunity for exposure e.g. washing, open mechanic transport between process equipment	Assumes a good basic standard of occupational hygiene is implemented [G1].	0.033
NPAC.C5 : PROC 8b : Sampling or charging / discharging bags/containers of non powdered materials in dedicated facilities with appropriate RMM's in place	Assumes a good basic standard of occupational hygiene is implemented [G1].	0.033
NPAC.C6 : PROC 8a : Charging / discharging	Assumes a good basic standard of occupational hygiene is	0.167

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Manufacture of Activated Carbon, High Density Skeleton (IU# C1 through C12). Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling, associated laboratory activities, maintenance and cleaning of equipment		
Based on ECHA Template CSA&IR Part D draft Version 2, combined with the GES Narrative Format		
bags/containers of non powdered materials in non dedicated facilities without dust removal system in place	implemented [G1].	
NPAC.C9 : PROC 8a : Sampling of dry activated carbon in non-dedicated facilities	Assumes a good basic standard of occupational hygiene is implemented [G1].	0.167
NPAC.C10 : PROC 4 : Maintenance, working in or at opened installations or installation components (emptied before start of work)	Assumes a good basic standard of occupational hygiene is implemented [G1].	0.167
NPAC.C11 : PROC 4 : Cleaning of equipment	Assumes a good basic standard of occupational hygiene is implemented [G1].	0.167
NPAC.C12 : PROC 22 : Potentially closed processing operations with minerals/metals at elevated temperatures.	Assumes a good basic standard of occupational hygiene is implemented [G1].	0.033
Section 2.2		
Control of environmental exposure		
Product characteristics	There are no hazards potentially requiring control of risk related to environmental endpoints. This also supports the conclusion that there is no need to assess the indirect exposure of man via the environment through the oral route.	
Section 3		
Exposure Estimation		
3.1 Human Health	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. (G8) The ECETOC TRA tool has been used to estimate dermal workplace exposures unless otherwise indicated. (G21) Exposure levels can be calculated by multiplying the RCRs listed with the DNEL (2 mg/m ³).	
3.2 Environment	As no hazards are present, no exposure estimation is needed. The indirect exposure of man via ambient air (e.g. in the neighborhood of sites where a substance is manufactured or used) is not evaluated although it can not be excluded. In the Chemical Safety Assessment only systemic effects need to be considered. AC - HDS does not cause acute or long-term systemic effects.	
Section 4		
Guidance to check compliance with the exposure scenarios		
4.1 Health	Page 1 of appendix 2 provides a table which can be used to check compliance with the exposure scenarios. Effectiveness of RMMs and workplace exposure levels can be assess using proper industrial hygiene techniques.	
4.2 Environment	Not applicable based on absence of hazard.	
Section 5		
Other information		
5.1 Human Health	Low oxygen work procedure – Wet activated carbon depletes oxygen from air and, therefore, dangerously low levels of oxygen may be encountered. Whenever workers enter a vessel containing activated carbon, the vessels oxygen content should be determined and work procedures for potentially low oxygen areas should be followed.	
5.2 Environment	Spent activated carbon may contain contaminants which require is the following: Dispose of waste or used sacks/containers according to local regulations [ENVT10].	

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Table 2 Manufacture of Activated Carbon, High Density Skeleton (powdered)

Manufacture of Activated Carbon, High Density Skeleton (powdered)		
Based on ECHA Template CSA&IR Part D draft Version 2, combined with the GES Narrative Format		
Section 1	Exposure Scenario Title	
Title	Manufacture of Activated Carbon, High Density Skeleton, powdered	
Use Descriptors	Sectors of Use: Industrial (SU3)	
	Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC 8b, PROC15, PROC 22	
	Environmental Release Categories: ERC 1	
Scenarios covered	PAC C1 through C12. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling, associated laboratory activities, maintenance and cleaning of equipment	
Section 2	Operational conditions and risk management measures	
Section 2.1	Control of worker exposure	
Product characteristics and operational conditions		
Physical form of product	Solid, high dustiness [OC6].	
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].	
Amounts used	Uses covered ranging from ml up to m ³ s	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]	
Human factors not influenced by risk management	Not applicable	
Other Operational Conditions affecting worker exposure	Assumes activities are at ambient temperature (unless stated differently). [G17]. Assumes a good basic standard of occupational hygiene is implemented [G1]. Indoor (OC8). Outdoor (OC 9).	
Contributing Scenarios	Risk Management Measures	Risk Characterization Ratios (RCR)
	Note: list RMM standard phrases according to the control hierarchy indicated in the ECHA template: 1. Technical measures to prevent release, 2. Technical measures to prevent dispersion, 3. Organizational measures, 4. Personal protection. Phrases between brackets are good practice advice only, beyond REACH Chemical Safety Assessment and may be communicated in Section 5 of the ES or within the main sections of the SDS. Unless stated otherwise all listed measures are required to achieve safe use	
PAC.C1 & PAC.C1 : PROC 1: Handling in closed system, no sampling required e.g. milling, closed mechanic or pneumatic transfer between process equipment, silo	No specific measures identified [EII8].	0.003
PAC.C2 : PROC 2 : Handling in closed continuous system, sampling required, e.g. closed mechanic or pneumatic transfer between process equipment with sampling	No specific measures identified [EII8].	0.333
PAC.C2w : PROC 2 : Handling in closed continuous system, sampling required, e.g. closed mechanic or pneumatic transfer between process equipment with sampling	No specific measures identified [EII8].	0.003
PAC.C3 : PROC 3 : Handling in closed batch system, sampling required e.g. blending, closed mechanic or pneumatic transfer between process equipment with sampling, sampling from silo	No specific measures identified [EII8].	0.333
PAC.C3w : PROC 3 : Handling in closed batch system, sampling required e.g. blending, closed mechanic or pneumatic transfer between process equipment with sampling, sampling from silo	No specific measures identified [EII8].	0.033
PAC.C4w : PROC 4 : Moist or slurry (no dust): Handling in system with opportunity for exposure e.g. washing, open mechanic transport between process equipment	No specific measures identified [EII8].	0.167
PAC.C5 : PROC 8a : Coupling and uncloupling of flexible hose	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.167

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Manufacture of Activated Carbon, High Density Skeleton (powdered)		
Based on ECHA Template CSA&IR Part D draft Version 2, combined with the GES Narrative Format		
PAC.C6 : PROC 8b : Sampling and charging / discharging bags/containers of powdered materials in dedicated facilities with appropriate RMM's in place	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29} Use dedicated equipment [E85].	0.417
PAC.C7 : PROC 8a : Charging / discharging bags/containers of powdered materials in non dedicated facilities without dust removal system in place PAC.C8 : PROC 8a : Sampling bags/containers of powdered materials in non dedicated facilities without dust removal system in place	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.167
PAC.C9 : PROC 4 : Maintenance, working in or at opened installations or installation components (emptied before start of work) PAC.C10 : PROC 4 : Cleaning of equipment	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.833
PAC.C11 : PROC 22 : Potentially closed processing operations with minerals/metals at elevated temperatures.	No specific measures identified [EI18].	0.333
Section 2.2	Control of environmental exposure	
Product characteristics	There are no hazards potentially requiring control of risk related to environmental endpoints. This also supports the conclusion that there is no need to assess the indirect exposure of man via the environment through the oral route.	
Section 3	Exposure Estimation	
3.1 Human Health	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. (G8) The ECETOC TRA tool has been used to estimate dermal workplace exposures unless otherwise indicated. (G21) Exposure levels can be calculated by multiplying the RCRs listed with the DNEL (2 mg/m ³).	
3.2 Environment	As no hazards are present, no exposure estimation is needed. The indirect exposure of man via ambient air (e.g. in the neighborhood of sites where a substance is manufactured or used) is not evaluated although it can not be excluded. In the Chemical Safety Assessment only systemic effects need to be considered. AC - HDS does not cause acute or long-term systemic effects.	
Section 4	Guidance to check compliance with the exposure scenarios	
4.1 Health	Page 1 of appendix 2 provides a table which can be used to check compliance with the exposure scenarios. Effectiveness of RMMs and workplace exposure levels can be assess using proper industrial hygiene techniques.	
4.2 Environment	Not applicable based on absence of hazard.	
Section 5	Other information	
5.1 Human Health	Low oxygen work procedure – Wet activated carbon depletes oxygen from air and, therefore, dangerously low levels of oxygen may be encountered. Whenever workers enter a vessel containing activated carbon, the vessels oxygen content should be determined and work procedures for potentially low oxygen areas should be followed.	
5.2 Environment	Spent activated carbon may contain contaminants which require is the following: Dispose of waste or used sacks/containers according to local regulations [ENVT10].	

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Table 3 Formulation of Activated Carbon, High Density Skeleton non powdered / wetted (NPAC B1 through B15)

Formulation (IU# B1 through B15) of Activated Carbon, High Density Skeleton non powdered / wetted, Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling, associated laboratory activities, maintenance and cleaning of equipment		
Based on ECHA Template CSA&IR Part D draft Version 2, combined with the GES Narrative Format		
Section 1	Exposure Scenario Title	
Title	Formulation of Activated Carbon, High Density Skeleton, non powdered / wetted	
Use Descriptors	Sectors of Use: Industrial (SU 3)	
	Proces Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC 8b, PROC15, PROC 22	
	Environmental Release Categories: ERC 1	
Scenarios covered	Formulation (IU# B1 through B15), packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and cleaning of equipment	
Section 2	Operational conditions and risk management measures	
Section 2.1	Control of worker exposure	
Product characteristics and operational conditions		
Physical form of product	Solid, low dustiness (OC1)	
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].	
Amounts used	Uses covered ranging from ml up to m ³ s	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]	
Human factors not influenced by risk management	Not applicable	
Other Operational Conditions affecting worker exposure	Assumes activities are at ambient temperature (unless stated differently). [G17]. Assumes a good basic standard of occupational hygiene is implemented [G1]. Indoor (OC8). Outdoor (OC 9).	
Contributing Scenarios	Risk Management Measures	Risk Charactization Ratios (RCR)
NPAC.B1 : PROC 1 : handling/use in closed systems, no likelihood of exposure; e.g. Dust-free dosing systems	No specific measures identified [EII8].	0.003
NPAC.B1m : PROC 1 : Mixed with other substance(s): handling/use in closed systems, no likelihood of exposure; e.g. impregnation of non powdered activated in closed systems,	No specific measures identified [EII8].	0.003
NPAC.B2 : PROC 2 : Handling/use in closed continuous system, occasional controlled exposure (sampling); e.g. Dust-free dosing systems	No specific measures identified [EII8].	0.003
NPAC.B2m : PROC 2 : Mixed with other substance(s): handling/use in closed continuous system, occasional controlled exposure (sampling); e.g. impregnation of non powdered activated in closed systems,	No specific measures identified [EII8].	0.003
NPAC.B3 : PROC 3 : Handling/use in closed batch system, occasional controlled exposure (sampling); e.g. Dust-free dosing systems	No specific measures identified [EII8].	0.033
NPAC.B3m : PROC 3 : Mixed with other substance(s): handling/use in closed batch system, occasional controlled exposure (sampling); e.g. impregnation of non powdered activated in closed systems,	No specific measures identified [EII8].	0.033

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Formulation (IU# B1 through B15) of Activated Carbon, High Density Skeleton non powdered / wetted, Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling, associated laboratory activities, maintenance and cleaning of equipment		
Based on ECHA Template CSA&IR Part D draft Version 2, combined with the GES Narrative Format		
NPAC.B4 : PROC 4 : Handling/use in closed batch system, occasional controlled exposure (emitted dust); e.g. impregnation of non powdered activated in tanks, into which materials are charged, during which carbon dust is emitted.	No specific measures identified [E118].	0.167
NPAC.B4m : PROC 4 : Mixed with other substance(s): handling/use in closed batch system, occasional controlled exposure (emitted dust) during charging, sampling, discharge; e.g. impregnation of non powdered activated in tanks, into which materials are charged, during which carbon dust is emitted.	No specific measures identified [E118].	0.167
NPAC.B5 : PROC 5 : Mixing of carbon with little or no liquid in open system, continuous significant dust release;	No specific measures identified [E118].	0.167
NPAC.B5m : PROC 5 : Mixed with other substance(s): mixing of carbon with little or no liquid in open system, continuous significant dust release	No specific measures identified [E118].	0.167
NPAC.B6 : PROC 8b : Sampling or discharging bags/containers, dust released but contained with removal system; e.g. Discharging ;from small bags or bigbags bags into treatment tanks or storage tanks	No specific measures identified [E118].	0.033
NPAC.B6m : PROC 8b : Mixed with other substance(s): sampling or discharging bags/containers, dust released but contained with removal system; e.g. Discharging impregnated from equipment into containers	No specific measures identified [E118].	0.033
NPAC.B7 : PROC 8a : Discharging bags/containers, dust released, no dust removal system; e.g. Discharging non powdered Activated Carbon from small bags or bigbags bags into treatment tanks or storage tanks	No specific measures identified [E118].	0.167
NPAC.B7m : PROC 8a : Mixed with other substance(s): discharging bags/containers, dust released, no dust removal system e.g. Discharging impregnated non powdered Activated Carbon from equipment into containers	No specific measures identified [E118].	0.167
NPAC.B8 : PROC 8a : Sampling of dry material, non-dedicated facilities	No specific measures identified [E118].	0.167
NPAC.B8m : PROC 8a : Mixed with other substance(s): sampling of dry material, non-dedicated facilities All cases where the carbon is in a slurry (with water or another liquid) and therefore no dust is emitted. E.g.: impregnation of non powdered Activated Carbon in suspension	No specific measures identified [E118].	0.167
NPAC.B9 : PROC 9 : Filling of jars or bags with activated carbon, filling of gas mask canisters, POU filters, ELCD filters	No specific measures identified [E118].	0.033
NPAC.B9m : PROC 9 : Mixed with other substance(s): filling of jars or bags with mixtures containing non powdered activated carbon including catalysts, filling of gas mask canisters and POU filters All cases where the carbon is handled in a moist form (with water or another liquid) and therefore very little or no dust is emitted. E.g. Discharging impregnated carbon.	No specific measures identified [E118].	0.033

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Formulation (IU# B1 through B15) of Activated Carbon, High Density Skeleton non powdered / wetted, Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling, associated laboratory activities, maintenance and cleaning of equipment		
Based on ECHA Template CSA&IR Part D draft Version 2, combined with the GES Narrative Format		
NPAC.B10m : PROC 14 : Mixed with other substance(s): production of blocks / plates / tablets / from AC and binder i.e. sampling of dry material (sampling of slurry or wetted: see slurry handling or most form handling)	No specific measures identified [EI18].	0.033
NPAC.Bx : PROC 8a : Coupling and uncoupling of flexible hose	No specific measures identified [EI18].	0.167
NPAC.Bxm : PROC 8a : Mixed with other substances, coupling and uncoupling of flexible hose	No specific measures identified [EI18].	0.167
Section 2.2	Control of environmental exposure	
Product characteristics	There are no hazards potentially requiring control of risk related to environmental endpoints. This also supports the conclusion that there is no need to assess the indirect exposure of man via the environment through the oral route.	
Section 3	Exposure Estimation	
3.1 Human Health	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. (G8) The ECETOC TRA tool has been used to estimate dermal workplace exposures unless otherwise indicated. (G21) Exposure levels can be calculated by multiplying the RCRs listed with the DNEL (2 mg/m ³).	
3.2 Environment	As no hazards are present, no exposure estimation is needed. The indirect exposure of man via ambient air (e.g. in the neighborhood of sites where a substance is manufactured or used) is not evaluated although it can not be excluded. In the Chemical Safety Assessment only systemic effects need to be considered. AC - HDS does not cause acute or long-term systemic effects.	
Section 4	Guidance to check compliance with the exposure scenarios	
4.1 Health	Page 1 of appendix 2 provides a table which can be used to check compliance with the exposure scenarios. Effectiveness of RMMs and workplace exposure levels can be assess using proper industrial hygiene techniques.	
4.2 Environment	Not applicable based on absence of hazard.	
Section 5	Other information	
5.1 Human Health	Low oxygen work procedure – Wet activated carbon depletes oxygen from air and, therefore, dangerously low levels of oxygen may be encountered. Whenever workers enter a vessel containing activated carbon, the vessels oxygen content should be determined and work procedures for potentially low oxygen areas should be followed.	
5.2 Environment	Spent activated carbon may contain contaminants which require is the following: Dispose of waste or used sacks/containers according to local regulations [ENVT10].	

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Annex II: List of exposure scenarios covered

KG 30.2

Extruded carbon

Version: 2.0

Up-stream product of water-steam activated carbon:

Revision date: 11-01-2013

Table 4 Formulation of Activated Carbon, High Density Skeleton, powdered (PAC B1 through B15)

Formulation of Activated Carbon, High Density Skeleton, powdered (IU# B1 through B15), Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling, associated laboratory activities, maintenance and cleaning of equipment		
Based on ECHA Template CSA&IR Part D draft Version 2, combined with the GES Narrative Format		
Section 1	Exposure Scenario Title	
Title	Formulation of Activated Carbon, High Density Skeleton, powdered	
Use Descriptors	Sectors of Use: Industrial (SU 3)	
	Proces Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC 8b, PROC15, PROC 22	
	Environmental Release Categories: ERC 2	
Scenarios covered	Formulation (IU# B1 through B15), packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and cleaning of equipment	
Section 2	Operational conditions and risk management measures	
Section 2.1	Control of worker exposure	
Product characteristics and operational conditions		
Physical form of product	Solid, high dustiness [OC6].	
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].	
Amounts used	Uses covered ranging from ml up to m ³ s	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]	
Human factors not influenced by risk management	Not applicable	
Other Operational Conditions affecting worker exposure	Assumes activities are at ambient temperature (unless stated differently). [G17]. Assumes a good basic standard of occupational hygiene is implemented [G1]. Indoor (OC8). Outdoor (OC 9).	
Contributing Scenarios	Risk Management Measures	Risk Charactization Ratios (RCR)
	Note: list RMM standard phrases according to the control hierarchy indicated in the ECHA template: 1. Technical measures to prevent release, 2. Technical measures to prevent dispersion, 3. Organizational measures , 4. Personal protection. Phrases between brackets are good practice advice only, beyond REACH Chemical Safety Assessment and may be communicated in Section 5 of the ES or within the main sections of the SDS. Unless stated otherwise all listed measures are required to achieve safe use	
PAC.B1 : PROC 1 : Handling/use in closed systems, no likelihood of exposure	No specific measures identified [EII 8].	0.003
PAC.B10m : PROC 14 : Mixed with other substance(s):production of blocks/plates/tablets from AC and a binder	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.333
PAC.B15 : PROC 8a : Coupling and uncoupling of flexible hose PAC.B15m : PROC 8a : Mixed with other substances , coupling and uncoupling of flexible hose	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.167
PAC.B15w : PROC 8a : Moist or slurry (no dust)	No specific measures identified [EII 8].	0.167
PAC.B1m : PROC 1 : Mixed with other substance(s): handling/use in closed systems, no likelihood of exposure	No specific measures identified [EII 8].	0.003
PAC.B1w : PROC 1 : Moist or slurry (no dust): handling/use in closed systems, no likelihood of exposure	No specific measures identified [EII 8].	0.003
PAC.B2 : RPOC 2 : Handling/use in closed continuous system, occasional controlled exposure (sampling)	No specific measures identified [EII 8].	0.333
PAC.B2m : PROC 2 : Mixed with other substances: handling/use in closed continuous system, occasional controlled exposure (sampling)	No specific measures identified [EII 8].	0.333

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Extruded carbon

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Up-stream product of water-steam activated carbon:

Revision date: 11-01-2013

Formulation of Activated Carbon, High Density Skeleton, powdered (IU# B1 through B15), Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling, associated laboratory activities, maintenance and cleaning of equipment		
Based on ECHA Template CSA&IR Part D draft Version 2, combined with the GES Narrative Format		
PAC.B2w : PROC 2 : Moist or slurry: handling/use in closed continuous system, occasional controlled exposure (sampling)	No specific measures identified [EI18].	0.003
PAC.B3 : PROC 3 : Handling/use in closed batch system, occasional controlled exposure (sampling)	No specific measures identified [EI18].	0.333
PAC.B3m : PROC 3 : Mixed with other substance(s): handling/use in closed batch system, occasional controlled exposure (sampling)	No specific measures identified [EI18].	0.333
PAC.B3w : PROC 3 : Moist or slurry (no dust): handling/use in closed batch system, occasional controlled exposure (sampling)	No specific measures identified [EI18].	0.033
PAC.B4 : PROC 4 : Handling/use in closed batch system, occasional controlled exposure (emitted dust) during charging, sampling, discharge PAC.B4m : PROC 4 : Mixed with other substance(s): handling/use in closed batch system, occasional controlled exposure (emitted dust) during charging, sampling ,discharge	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.833
PAC.B4w : PROC 4 : Moist or slurry (no dust): handling/use in closed batch system, occasional controlled exposure during charging, sampling ,discharge	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.167
PAC.B5 : PROC 5 : Mixing of carbon with little or no liquid in open system, continuous significant dust release PAC.B5m : PROC 5 : Mixed with other substance(s): mixing of carbon with little or no liquid in open system, continuous significant dust release	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.833
PAC.B5w : PROC 5 : Moist or slurry (no dust): mixing of carbon with liquid in open system	No specific measures identified [EI18].	0.167
PAC.B6 : PROC 8b : Sampling or discharging bags/containers, dust released but contained with removal system PAC.B6m : PROC 8b : Mixed with other substance(s): sampling or discharging bags/containers, dust released but contained with removal system	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.417
PAC.B6w : PROC 8b : Moist or slurry (no dust): sampling or discharging bags/containers, dust released but contained with removal system	No specific measures identified [EI18].	0.033
PAC.B7 : PROC 8a : Discharging bags/containers, dust released, no dust removal system PAC.B7m : PROC 8a : Mixed with other substance(s): discharging bags/containers, dust released, no dust removal system	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.167
PAC.B7w : PROC 8a : Moist or slurry (no dust) : discharging bags/containersexposure due to spillages	No specific measures identified [EI18].	0.167
PAC.B8 : PROC 8a : Sampling of dry material, non-dedicated facilities PAC.B8m : PROC 8a : Mixed with other substance(s): sampling of dry material, non-dedicated facilities	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.167
PAC.B8w : PROC 8a : Moist or slurry (no dust) : sampling of dry material, non-dedicated facilities	No specific measures identified [EI18].	0.167

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Extruded carbon

Version: 2.0

Up-stream product of water-steam activated carbon:

Revision date: 11-01-2013

Formulation of Activated Carbon, High Density Skeleton, powdered (IU# B1 through B15), Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling, associated laboratory activities, maintenance and cleaning of equipment		
Based on ECHA Template CSA&IR Part D draft Version 2, combined with the GES Narrative Format		
PAC.B9 : PROC 9 : Filling of jars or bags with activated carbon PAC.B9m : PROC 9 : Mixed with other substance(s): filling of jars or bags with mixtures containing powdered activated carbon including catalysts	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29]	0.667
PAC.B9w : PROC 9 : Moist or slurry (no dust): filling of jars or bags with mixtures containing powdered activated carbon including catalysts	No specific measures identified [E118].	0.033
Section 2.2	Control of environmental exposure	
Product characteristics	There are no hazards potentially requiring control of risk related to environmental endpoints. This also supports the conclusion that there is no need to assess the indirect exposure of man via the environment through the oral route.	
Section 3 TBD	Exposure Estimation	
3.1 Human Health	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. (G8) The ECETOC TRA tool has been used to estimate dermal workplace exposures unless otherwise indicated. (G21) Exposure levels can be calculated by multiplying the RCRs listed with the DNEL (2 mg/m ³).	
3.2 Environment	As no hazards are present, no exposure estimation is needed. The indirect exposure of man via ambient air (e.g. in the neighborhood of sites where a substance is manufactured or used) is not evaluated although it can not be excluded. In the Chemical Safety Assessment only systemic effects need to be considered. AC - HDS does not cause acute or long-term systemic effects.	
Section 4	Guidance to check compliance with the exposure scenarios	
4.1 Health	Page 1 of appendix 2 provides a table which can be used to check compliance with the exposure scenarios. Effectiveness of RMMs and workplace exposure levels can be assess using proper industrial hygiene techniques.	
4.2 Environment	Not applicable based on absence of hazard.	
Section 5	Other information	
5.1 Human Health	Low oxygen work procedure – Wet activated carbon depletes oxygen from air and, therefore, dangerously low levels of oxygen may be encountered. Whenever workers enter a vessel containing activated carbon, the vessels oxygen content should be determined and work procedures for potentially low oxygen areas should be followed.	
5.2 Environment	Spend activated carbon may contain contaminants which require is the following: Dispose of waste or used sacks/containers according to local regulations [ENV10].	

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Annex II: List of exposure scenarios covered

KG 30.2

Extruded carbon

Version: 2.0

Up-stream product of water-steam activated carbon:

Revision date: 11-01-2013

Table 5 Professional use of Activated Carbon, High Density Skeleton, non powdered / wetted (NPAC. D1 through D20)

Professional use of Activated Carbon, High Density Skeleton, non powdered / wetted (NPAC. D1 through D20) as a component in a preparation including pouring/unloading from bags, drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities.		
Based on ECHA Template CSA&IR Part D draft Version 2, combined with the GES Narrative Format		
Section 1	Exposure Scenario Title	
Title	Professional end-use of Activated Carbon, High Density Skeleton, non-powdered / wetted	
Use Descriptors	Sectors of Use: Industrial (SU 22)	
	Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC 8b, PROC 9, PROC15	
	Environmental Release Categories: ERC 4	
Scenarios covered	Covers the professional use (NPAC. D1 through D20) as a component in a preparation including pouring/unloading from bags, drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities.	
Section 2	Operational conditions and risk management measures	
Section 2.1	Control of worker exposure	
Product characteristics and operational conditions		
Physical form of product	Solid, low dustiness [OC1].	
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].	
Amounts used	Uses covered ranging from ml up to m ³ s	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]	
Human factors not influenced by risk management	Not applicable	
Other Operational Conditions affecting worker exposure	Assumes activities are at ambient temperature (unless stated differently). [G17]. Assumes a good basic standard of occupational hygiene is implemented [G1]. Indoor (OC8). Outdoor (OC 9).	
Contributing Scenarios	Risk Management Measures	Risk Characterization Ratios (RCR)
	Note: list RMM standard phrases according to the control hierarchy indicated in the ECHA template: 1. Technical measures to prevent release, 2. Technical measures to prevent dispersion, 3. Organizational measures , 4. Personal protection. Phrases between brackets are good practice advice only, beyond REACH Chemical Safety Assessment and may be communicated in Section 5 of the ES or within the main sections of the SDS. Unless stated otherwise all listed measures are required to achieve safe use	
NPAC.D1 : PROC 15 : Laboratory use of non powdered AC with dust removal	No specific measures identified [EII 8].	0.033
NPAC.D2m : PROC 5: Mixed with other substance(s): activated carbon in the soil	No specific measures identified [EII 8].	0.333
NPAC.D2m : PROC 5: Mixed with other substance(s): activated carbon in the soil	No specific measures identified [EII 8].	0.333
NPAC.D3 : PROC 1 : Handling/use in closed systems, no likelihood of exposure	No specific measures identified [EII 8].	0.003
NPAC.D.3m : PROC 1 Mixed with other substances; handling/use in closed systems, no likelihood of exposure	No specific measures identified [EII 8].	0.003
NPAC.D4m : PROC 3 : Mixed with other substance(s): Transfer by suction of AC from filter into dedicated tank car	No specific measures identified [EII 8].	0.033
NPAC.D5m : PROC 1 : Mixed with other substance(s): handling and use of articles without release -- INDOOR	No specific measures identified [EII 8].	0.003
NPAC.D6m: PROC 1 : Mixed with other substance(s): handling and use of articles without release -- OUTDOOR	No specific measures identified [EII 8].	0.003
NPAC.D7m/a : PROC 8a : Mixed with other substances, use in municipal swimming pools or aquaria	No specific measures identified [EII 8].	0.167
NPAC.D7m/d : PROC 8a : Mixed with other substances, use in municipal swimming pools or aquaria	No specific measures identified [EII 8].	0.167
NPAC.D8m/a : PROC 2 : Mixed with other substances, use in municipal swimming pools or aquaria	No specific measures identified [EII 8].	0.003

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Extruded carbon

Version: 2.0

Up-stream product of water-steam activated carbon:

Revision date: 11-01-2013

Professional use of Activated Carbon, High Density Skeleton, non powdered / wetted (NPAC. D1 through D20) as a component in a preparation including pouring/unloading from bags, drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities.		
Based on ECHA Template CSA&IR Part D draft Version 2, combined with the GES Narrative Format		
NPAC.D8m/d : PROC 2 : Mixed with other substances, use in municipal swimming pools or aquaria	No specific measures identified [EII 8].	0.003
NPAC.D9m : PROC 9 : Use by medical / health professional in medical equipment	No specific measures identified [EII 8].	0.167
NPAC.D10 : PROC 2 : Handling/use in closed continuous system, occasional controlled exposure (sampling)	No specific measures identified [EII 8].	0.003
NPAC.D10: PROC 3 : Handling/use in closed batch system, occasional controlled exposure (sampling)	No specific measures identified [EII 8].	0.033
NPAC.D10m : PROC 2 : Mixed with other substances: handling/use in closed continuous system, occasional controlled exposure (sampling)	No specific measures identified [EII 8].	0.003
NPAC.D10m : PROC3 : Mixed with other substances : handling/use in closed batch system, occasional controlled exposure (sampling)	No specific measures identified [EII 8].	0.033
NPAC.D11 : PROC 4 : Handling/use in closed batch system, occasional controlled exposure (emitted dust)	No specific measures identified [EII 8].	0.333
NPAC.D11m : PROC 4 : Mixed with other substances : handling/use in closed batch system, occasional controlled exposure (emitted dust) during charging, sampling, discharge	No specific measures identified [EII 8].	0.333
NPAC.D12 : PROC 8b : Sampling or discharging bags/containers, dust release but contained with removal system sampling, discharge	No specific measures identified [EII 8].	0.167
NPAC.D12m : PROC 8b : Mixed with other substances : sampling or discharging bags/containers, dust release but contained with removal system sampling, discharge	No specific measures identified [EII 8].	0.167
NPAC.D13 : PROC 8a : Discharging bags/containers, dust released, no dust removal system	No specific measures identified [EII 8].	0.167
NPAC.D13m : PROC 8a : Mixed with other substances; discharging bags/containers, dust released, no dust removal system	No specific measures identified [EII 8].	0.167
NPAC.D14 : PROC 8a : Sampling of dry material, non-dedicated facilities	No specific measures identified [EII 8].	0.167
NPAC.D14m : PROC 8a : Mixed with other substances: sampling of material, non-dedicated facilities	No specific measures identified [EII 8].	0.167
NPAC.D16 : PROC 8a : Coupling and uncoupling of flexible hose	No specific measures identified [EII 8].	0.167
NPAC.D16m : PROC 8a : Mixed with other substances, coupling and uncoupling of flexible hose	No specific measures identified [EII 8].	0.167
Section 2.2	Control of environmental exposure	
Product characteristics	There are no hazards potentially requiring control of risk related to environmental endpoints. This also supports the conclusion that there is no need to assess the indirect exposure of man via the environment through the oral route.	
Section 3 TBD	Exposure Estimation	
3.1 Human Health	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. (G8) The ECETOC TRA tool has been used to estimate dermal workplace exposures unless otherwise indicated. (G21) Exposure levels can be calculated by multiplying the RCRs listed with the DNEL (2 mg/m ³).	
3.2 Environment	As no hazards are present, no exposure estimation is needed. The indirect exposure of man via ambient air (e.g. in the neighborhood of sites where a substance is manufactured or used) is not evaluated although it can not be excluded. In the Chemical Safety Assessment only systemic effects need to be considered. AC - HDS does not cause acute or long-term systemic effects.	
Section 4	Guidance to check compliance with the exposure scenarios	

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Annex II: List of exposure scenarios covered

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Extruded carbon

Version: 2.0

Up-stream product of water-steam activated carbon:

Revision date: 11-01-2013

Professional use of Activated Carbon, High Density Skeleton, non powdered / wetted (NPAC. D1 through D20) as a component in a preparation including pouring/unloading from bags, drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities.	
Based on ECHA Template CSA&IR Part D draft Version 2, combined with the GES Narrative Format	
4.1 Health	Page 1 of appendix 2 provides a table which can be used to check compliance with the exposure scenarios. Effectiveness of RMMs and workplace exposure levels can be assess using proper industrial hygiene techniques.
4.2 Environment	Not applicable based on absence of hazard.

Section 5	Other information
5.1 Human Health	Low oxygen work procedure – Wet activated carbon depletes oxygen from air and, therefore, dangerously low levels of oxygen may be encountered. Whenever workers enter a vessel containing activated carbon, the vessels oxygen content should be determined and work procedures for potentially low oxygen areas should be followed.
5.2 Environment	Spend activated carbon may contain contaminants which require is the following: Dispose of waste or used sacks/containers according to local regulations [ENVT10].

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KG 30.2

Extruded carbon

Version: 2.0

Up-stream product of water-steam activated carbon:

Revision date: 11-01-2013

Table 6 Industrial end-use (PAC A1 through A17) of Activated Carbon, High Density Skeleton, powdered

Industrial end-use (PAC A1 through A17) of Activated Carbon, High Density Skeleton, powdered as a component in a preparation including transfer from storage, pouring/unloading from drums or containers in batch or continuous operations, including storage, materials transfers, sampling.		
Based on ECHA Template CSA&IR Part D draft Version 2, combined with the GES Narrative Format		
Section 1	Exposure Scenario Title	
Title	Industrial end-use of Activated Carbon, High Density Skeleton, powdered	
Use Descriptors	Sectors of Use: Industrial (SU 3)	
	Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC 8b, PROC 9, PROC15, PROC 16	
	Environmental Release Categories: ERC 4	
Scenarios covered	Industrial end-use (IU# A1 through A17) as a component in a preparation including transfer from storage, pouring/unloading from drums or containers in batch or continuous operations, including storage, materials transfers, sampling.	
Section 2	Operational conditions and risk management measures	
Section 2.1	Control of worker exposure	
Product characteristics and operational conditions		
Physical form of product	Solid, high dustiness [OC6].	
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].	
Amounts used	Uses covered ranging from ml up to m ³ s	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]	
Human factors not influenced by risk management	Not applicable	
Other Operational Conditions affecting worker exposure	Assumes activities are at ambient temperature (unless stated differently). [G17]. Assumes a good basic standard of occupational hygiene is implemented [G1]. Indoor (OC8). Outdoor (OC 9).	
Contributing Scenarios	Risk Management Measures Note: list RMM standard phrases according to the control hierarchy indicated in the ECHA template: 1. Technical measures to prevent release, 2. Technical measures to prevent dispersion, 3. Organizational measures , 4. Personal protection. Phrases between brackets are good practice advice only, beyond REACH Chemical Safety Assessment and may be communicated in Section 5 of the ES or within the main sections of the SDS. Unless stated otherwise all listed measures are required to achieve safe use	Risk Characterization Ratios (RCR)
PAC.A1 : PROC 1 : Handling/use in closed systems, no likelihood of exposure	No specific measures identified [EI18].	0.003
PAC.A1m : PROC 1 : Mixed with other substances; handling/use in closed systems, no likelihood of exposure	No specific measures identified [EI18].	0.003
PAC.A1w : PROC 1 : Moist or slurry (no dust); handling/use in closed systems, no likelihood of exposure	No specific measures identified [EI18].	0.003
PAC.A2 : PROC 2 : Handling/use in closed continuous system, occasional controlled exposure (sampling)	No specific measures identified [EI18].	0.333
PAC.A2m : PROC 2 : Mixed with other substances: handling/use in closed continuous system, occasional controlled exposure (sampling)	No specific measures identified [EI18].	0.333
PAC.A2w : PROC 2 : Moist or slurry (no dust): handling/use in closed continuous system, occasional controlled exposure (sampling)	No specific measures identified [EI18].	0.003
PAC.A3 : PROC 3 : Handling/use in closed batch system, occasional controlled exposure (sampling)	No specific measures identified [EI18].	0.333
PAC.A3m : PROC 3 : Mixed with other substances : handling/use in closed batch system, occasional controlled exposure (sampling)	No specific measures identified [EI18].	0.333
PAC.A3w : PROC 3 : Moist or slurry (no dust): handling/use in closed batch system, occasional controlled exposure (sampling)	No specific measures identified [EI18].	0.033

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Extruded carbon

Version: 2.0

Up-stream product of water-steam activated carbon:

Revision date: 11-01-2013

Industrial end-use (PAC A1 through A17) of Activated Carbon, High Density Skeleton, powdered as a component in a preparation including transfer from storage, pouring/unloading from drums or containers in batch or continuous operations, including storage, materials transfers, sampling.		
PAC.A4 : PROC 4 : Handling/use in closed batch system, occasional controlled exposure (emitted dust) PAC.A4m : PROC 4 : Mixed with other substances : handling/use in closed batch system, occasional controlled exposure (emitted dust) during charging, sampling, discharge	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.833
PAC.A4w : PROC 4 : Moist or slurry (no dust) : handling/use in closed batch system, occasional controlled exposure	No specific measures identified [E118].	0.167
PAC.A5 : PROC 8b : Sampling or discharging bags/containers, dust contained with removal system PAC.A5m : PROC 8b : Mixed with other substances : sampling or discharging bags/containers, dust release contained with removal system	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.417
PAC.A5w : PROC 8b : Moist or slurry (no dust) : sampling or discharging bags/containers, dedicated plants (no exposure)	No specific measures identified [E118].	0.033
PAC.A6 : PROC 8a : Discharging bags/containers, dust released, no dust removal system PAC.A6m : PROC 8a : Mixed with other substances; discharging bags/containers, dust released, no dust removal system	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.167
PAC.A6w : PROC 8a : Moist or slurry (no dust) ; discharging bags/containers, exposure due to spillages	No specific measures identified [E118].	0.167
PAC.A7 : PROC 8a : Sampling of dry material, non-dedicated facilities PAC.A7m : PROC 8a : Mixed with other substances: sampling of material, non-dedicated facilities	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.167
PAC.A7w : PROC 8a : Moist or slurry (no dust): sampling of material, non-dedicated facilities	No specific measures identified [E118].	0.167
PAC.A8m : PROC 16 : Mixed with other substances: waste incineration with energy recovery	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.333
PAC.A9m : PROC 5: Mixed with other substances: activated carbon in soil	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.833
PAC.A10m : PROC 2 : Handling/use in closed continuous system, occasional controlled exposure (sampling)	No specific measures identified [E118].	0.333
PAC.A11m : PROC 9 : Filling of small containers in dedicated facilities	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.667
PAC.A12m : PROC 14 : Pelletizing or extrusion	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.333
PAC.A13m : PROC 19 : Hand mixing	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.833

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Annex II: List of exposure scenarios covered

KG 30.2

Extruded carbon

Version: 2.0

Up-stream product of water-steam activated carbon:

Revision date: 11-01-2013

Industrial end-use (PAC A1 through A17) of Activated Carbon, High Density Skeleton, powdered as a component in a preparation including transfer from storage, pouring/unloading from drums or containers in batch or continuous operations, including storage, materials transfers, sampling.		
PAC.A14 : PROC 15 Laboratory use of powdered AC with dust removal	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.167
PAC.A15m : PROC 1 mixed with other substances: handling and use of articles without release -- INDOOR	No specific measures identified [EI18].	0.003
PAC.A15m : PROC 1 mixed with other substances: handling and use of articles without release -- OUTDOOR	No specific measures identified [EI18].	0.033
PAC.A16m : PROC 3 : Mixed with other substance(s): Transfer by suction of AC from filter into dedicated tank car	No specific measures identified [EI18].	0.333
PAC.A17 : PROC 8a : Mixed with other substances, use in municipal swimming pools or aquaria PAC.A17m : PROC 8a : Mixed with other substances, use in municipal swimming pools or aquaria	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.833
PAC.A18 : PROC 2 : Mixed with other substances, use in municipal swimming pools or aquaria	No specific measures identified [EI18].	0.033
PAC.A18m : PROC 2 : Mixed with other substances, use in municipal swimming pools or aquaria	No specific measures identified [EI18].	0.033
PAC.Ax : PROC 8a : Coupling and uncoupling of hose	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.167
Section 2.2	Control of environmental exposure	
Product characteristics	There are no hazards potentially requiring control of risk related to environmental endpoints. This also supports the conclusion that there is no need to assess the indirect exposure of man via the environment through the oral route.	
Section 3	Exposure Estimation	
3.1 Human Health	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. (G8) The ECETOC TRA tool has been used to estimate dermal workplace exposures unless otherwise indicated. (G21) Exposure levels can be calculated by multiplying the RCRs listed with the DNEL (2 mg/m ³).	
3.2 Environment	As no hazards are present, no exposure estimation is needed. The indirect exposure of man via ambient air (e.g. in the neighborhood of sites where a substance is manufactured or used) is not evaluated although it can not be excluded. In the Chemical Safety Assessment only systemic effects need to be considered. AC - HDS does not cause acute or long-term systemic effects.	
Section 4	Guidance to check compliance with the exposure scenarios	
4.1 Health	Page 1 of appendix 2 provides a table which can be used to check compliance with the exposure scenarios. Effectiveness of RMMS and workplace exposure levels can be assess using proper industrial hygiene techniques.	
4.2 Environment	Not applicable based on absence of hazard.	
Section 5	Other information	
5.1 Human Health	Low oxygen work procedure – Wet activated carbon depletes oxygen from air and, therefore, dangerously low levels of oxygen may be encountered. Whenever workers enter a vessel containing activated carbon, the vessels oxygen content should be determined and work procedures for potentially low oxygen areas should be followed.	
5.2 Environment	Spend activated carbon may contain contaminants which require is the following: Dispose of waste or used sacks/containers according to local regulations [ENVT10].	

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Annex II: List of exposure scenarios covered

KG 30.2

Extruded carbon

Version: 2.0

Up-stream product of water-steam activated carbon:

Revision date: 11-01-2013

Table 7 Professional use (NPAC. D1 through D20) of Activated Carbon, High Density Skeleton, non powdered / wetted

Professional use (NPAC. D1 through D20) of Activated Carbon, High Density Skeleton, non powdered / wetted as a component in a preparation including pouring/unloading from bags, drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities.		
Based on ECHA Template CSA&IR Part D draft Version 2, combined with the GES Narrative Format		
Section 1	Exposure Scenario Title	
Title	Professional end-use of Activated Carbon, High Density Skeleton, non-powdered / wetted	
Use Descriptors	Sectors of Use: Industrial (SU 22)	
	Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC 8b, PROC 9, PROC15	
	Environmental Release Categories: ERC 5, ERC 8a, ERC8d, ERC9a, ERC9b	
Scenarios covered	Covers the professional use (NPAC. D1 through D20) as a component in a preparation including pouring/unloading from bags, drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities.	
Section 2	Operational conditions and risk management measures	
Section 2.1	Control of worker exposure	
Product characteristics and operational conditions		
Physical form of product	Solid, low dustiness [OC1].	
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].	
Amounts used	Uses covered ranging from ml up to m ³ s	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]	
Human factors not influenced by risk management	Not applicable	
Other Operational Conditions affecting worker exposure	Assumes activities are at ambient temperature (unless stated differently). [G17]. Assumes a good basic standard of occupational hygiene is implemented [G1]. Indoor (OC8). Outdoor (OC 9).	
Contributing Scenarios	Risk Management Measures	Risk Characterization Ratios (RCR)
	Note: list RMM standard phrases according to the control hierarchy indicated in the ECHA template: 1. Technical measures to prevent release, 2. Technical measures to prevent dispersion, 3. Organizational measures, 4. Personal protection. Phrases between brackets are good practice advice only, beyond REACH Chemical Safety Assessment and may be communicated in Section 5 of the ES or within the main sections of the SDS. Unless stated otherwise all listed measures are required to achieve safe use	
NPAC.D1 : PROC 15 : Laboratory use of non powdered AC with dust removal Environmental release category (ERC): ERC 8a: Wide dispersive indoor use of processing aids in open systems	No specific measures identified [EII 8].	0.033
NPAC.D2m : PROC 5: Mixed with other substance(s): activated carbon in the soil ERC 5: Industrial use resulting in inclusion into or onto a matrix	No specific measures identified [EII 8].	0.333
NPAC.D2m : PROC 5: Mixed with other substance(s): activated carbon in the soil ERC 8d: Wide dispersive outdoor use of processing aids in open systems	No specific measures identified [EII 8].	0.333
NPAC.D3 : PROC 1 : Handling/use in closed systems, no likelihood of exposure ERC 9a: Wide dispersive indoor use of substances in closed systems	No specific measures identified [EII 8].	0.003
NPAC.D.3m : PROC 1 Mixed with other substances; handling/use in closed systems, no likelihood of exposure ERC 9a: Wide dispersive indoor use of substances in closed systems	No specific measures identified [EII 8].	0.003
NPAC.D4m : PROC 3 : Mixed with other substance(s): Transfer by suction of AC from filter into dedicated tank car ERC 9b: Wide dispersive outdoor use of substances in closed systems	No specific measures identified [EII 8].	0.033
NPAC.D5m : PROC 1 : Mixed with other substance(s): handling and use of articles without release – INDOOR ERC 9a: Wide dispersive indoor use of substances in closed systems	No specific measures identified [EII 8].	0.003

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Annex II: List of exposure scenarios covered

KG 30.2

Extruded carbon

Version: 2.0

Up-stream product of water-steam activated carbon:

Revision date: 11-01-2013

Professional use (NPAC. D1 through D20) of Activated Carbon, High Density Skeleton, non powdered / wetted as a component in a preparation including pouring/unloading from bags, drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities.		
Based on ECHA Template CSA&IR Part D draft Version 2, combined with the GES Narrative Format		
NPAC.D6m: PROC 1 : Mixed with other substance(s): handling and use of articles without release – OUTDOOR ERC 9b: Wide dispersive outdoor use of substances in closed systems	No specific measures identified [EII 8].	0.003
NPAC.D7m/a : PROC 8a : Mixed with other substances, use in municipal swimming pools or aquaria ERC 8a: Wide dispersive indoor use of processing aids in open systems	No specific measures identified [EII 8].	0.167
NPAC.D7m/d : PROC 8a : Mixed with other substances, use in municipal swimming pools or aquaria ERC 8a: Wide dispersive indoor use of processing aids in open systems	No specific measures identified [EII 8].	0.167
NPAC.D8m/a : PROC 2 : Mixed with other substances, use in municipal swimming pools or aquaria ERC 8d: Wide dispersive outdoor use of processing aids in open systems	No specific measures identified [EII 8].	0.003
NPAC.D8m/d : PROC 2 : Mixed with other substances, use in municipal swimming pools or aquaria ERC 9a: Wide dispersive indoor use of substances in closed systems	No specific measures identified [EII 8].	0.003
NPAC.D9m : PROC 9 : Use by medical / health professional in medical equipment ERC 9a: Wide dispersive indoor use of substances in closed systems	No specific measures identified [EII 8].	0.167
NPAC.D10 : PROC 2 : Handling/use in closed continuous system, occasional controlled exposure (sampling) ERC 9a: Wide dispersive indoor use of substances in closed systems ERC 9b: Wide dispersive outdoor use of substances in closed systems	No specific measures identified [EII 8].	0.003
NPAC.D10: PROC 3 : Handling/use in closed batch system, occasional controlled exposure (sampling) ERC 9a: Wide dispersive indoor use of substances in closed systems ERC 9b: Wide dispersive outdoor use of substances in closed systems	No specific measures identified [EII 8].	0.033
NPAC.D10m : PROC 2 : Mixed with other substances: handling/use in closed continuous system, occasional controlled exposure (sampling) ERC 9a: Wide dispersive indoor use of substances in closed systems ERC 9b: Wide dispersive outdoor use of substances in closed systems	No specific measures identified [EII 8].	0.003
NPAC.D10m : PROC3 : Mixed with other substances : handling/use in closed batch system, occasional controlled exposure (sampling) ERC 9a: Wide dispersive indoor use of substances in closed systems ERC 9b: Wide dispersive outdoor use of substances in closed systems	No specific measures identified [EII 8].	0.033
NPAC.D11 : PROC 4 : Handling/use in closed batch system, occasional controlled exposure (emitted dust) ERC 9a: Wide dispersive indoor use of substances in closed systems ERC 9b: Wide dispersive outdoor use of substances in closed systems	No specific measures identified [EII 8].	0.333
NPAC.D11m : PROC 4 : Mixed with other substances : handling/use in closed batch system, occasional controlled exposure (emitted dust) during charging, sampling, discharge ERC 9a: Wide dispersive indoor use of substances in closed systems	No specific measures identified [EII 8].	0.333
NPAC.D12 : PROC 8b : Sampling or discharging bags/containers, dust release but contained with removal system sampling, discharge ERC 8a: Wide dispersive indoor use of processing aids in open systems	No specific measures identified [EII 8].	0.167

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Annex II: List of exposure scenarios covered

KG 30.2

Extruded carbon

Version: 2.0

Up-stream product of water-steam activated carbon:

Revision date: 11-01-2013

Professional use (NPAC. D1 through D20) of Activated Carbon, High Density Skeleton, non powdered / wetted as a component in a preparation including pouring/unloading from bags, drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities.		
Based on ECHA Template CSA&IR Part D draft Version 2, combined with the GES Narrative Format		
NPAC.D12m : PROC 8b : Mixed with other substances : sampling or discharging bags/containers, dust release but contained with removal system sampling, discharge ERC 8a: Wide dispersive indoor use of processing aids in open systems	No specific measures identified [EII 8].	0.167
NPAC.D13 : PROC 8a : Discharging bags/containers, dust released, no dust removal system ERC 8a: Wide dispersive indoor use of processing aids in open systems	No specific measures identified [EII 8].	0.167
NPAC.D13m : PROC 8a : Mixed with other substances; discharging bags/containers, dust released, no dust removal system ERC 8a: Wide dispersive indoor use of processing aids in open systems	No specific measures identified [EII 8].	0.167
NPAC.D14 : PROC 8a : Sampling of dry material, non-dedicated facilities ERC 8a: Wide dispersive indoor use of processing aids in open systems	No specific measures identified [EII 8].	0.167
NPAC.D14m : PROC 8a : Mixed with other substances: sampling of material, non-dedicated facilities ERC 8a: Wide dispersive indoor use of processing aids in open systems	No specific measures identified [EII 8].	0.167
NPAC.D16 : PROC 8a : Coupling and uncoupling of flexible hose ERC 8a: Wide dispersive indoor use of processing aids in open systems	No specific measures identified [EII 8].	0.167
NPAC.D16m : PROC 8a : Mixed with other substances, coupling and uncoupling of flexible hose ERC 8a: Wide dispersive indoor use of processing aids in open systems	No specific measures identified [EII 8].	0.167
Section 2.2	Control of environmental exposure	
Product characteristics	There are no hazards potentially requiring control of risk related to environmental endpoints. This also supports the conclusion that there is no need to assess the indirect exposure of man via the environment through the oral route.	
Section 3 TBD	Exposure Estimation	
3.1 Human Health	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. (G8) The ECETOC TRA tool has been used to estimate dermal workplace exposures unless otherwise indicated. (G21) Exposure levels can be calculated by multiplying the RCRs listed with the DNEL (2 mg/m ³).	
3.2 Environment	As no hazards are present, no exposure estimation is needed. The indirect exposure of man via ambient air (e.g. in the neighborhood of sites where a substance is manufactured or used) is not evaluated although it can not be excluded. In the Chemical Safety Assessment only systemic effects need to be considered. AC - HDS does not cause acute or long-term systemic effects.	
Section 4	Guidance to check compliance with the exposure scenarios	
4.1 Health	Page 1 of appendix 2 provides a table which can be used to check compliance with the exposure scenarios. Effectiveness of RMMs and workplace exposure levels can be assess using proper industrial hygiene techniques.	
4.2 Environment	Not applicable based on absence of hazard.	
Section 5	Other information	
5.1 Human Health	Low oxygen work procedure – Wet activated carbon depletes oxygen from air and, therefore, dangerously low levels of oxygen may be encountered. Whenever workers enter a vessel containing activated carbon, the vessels oxygen content should be determined and work procedures for potentially low oxygen areas should be followed.	
5.2 Environment	Spend activated carbon may contain contaminants which require is the following: Dispose of waste or used sacks/containers according to local regulations [ENVT10].	

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Annex II: List of exposure scenarios covered

KG 30.2

Extruded carbon

Version: 2.0

Up-stream product of water-steam activated carbon:

Revision date: 11-01-2013

Table 8 Industrial end-use of Activated Carbon, High Density Skeleton, powdered (PAC A1 through A17)

Industrial end-use of Activated Carbon, High Density Skeleton, powdered (PAC A1 through A17) as a component in a preparation including transfer from storage, pouring/unloading from drums or containers in batch or continuous operations, including storage, materials transfers, sampling.		
Based on ECHA Template CSA&IR Part D draft Version 2, combined with the GES Narrative Format		
Section 1	Exposure Scenario Title	
Title	Industrial end-use of Activated Carbon, High Density Skeleton, powdered	
Use Descriptors	Sectors of Use: Industrial (SU 3)	
	Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC 8b, PROC 9, PROC15, PROC 16	
	Environmental Release Categories: ERC 4	
Scenarios covered	Industrial end-use (IU# A1 through A17) as a component in a preparation including transfer from storage, pouring/unloading from drums or containers in batch or continuous operations, including storage, materials transfers, sampling.	
Section 2	Operational conditions and risk management measures	
Section 2.1	Control of worker exposure	
Product characteristics and operational conditions		
Physical form of product	Solid, high dustiness [OC6].	
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].	
Amounts used	Uses covered ranging from ml up to m ³ s	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]	
Human factors not influenced by risk management	Not applicable	
Other Operational Conditions affecting worker exposure	Assumes activities are at ambient temperature (unless stated differently). [G17]. Assumes a good basic standard of occupational hygiene is implemented [G1]. Indoor (OC8). Outdoor (OC 9).	
Contributing Scenarios	Risk Management Measures Note: list RMM standard phrases according to the control hierarchy indicated in the ECHA template: 1. Technical measures to prevent release, 2. Technical measures to prevent dispersion, 3. Organizational measures , 4. Personal protection. Phrases between brackets are good practice advice only, beyond REACH Chemical Safety Assessment and may be communicated in Section 5 of the ES or within the main sections of the SDS. Unless stated otherwise all listed measures are required to achieve safe use	Risk Characterization Ratios (RCR)
PAC.D1 : PROC 15 : Laboratory use of powdered AC with dust removal ERC 8a: Wide dispersive indoor use of processing aids in open systems	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.333
PAC.D8w : PROC 4 : moist or slurry (no dust) : handling/use in closed batch system, occasional controlled exposure sampling, discharge ERC 8a: Wide dispersive indoor use of processing aids in open systems ERC 8d: Wide dispersive outdoor use of processing aids in open systems	No specific measures identified [EI18].	0.333
PAC.D9 : PROC 8b : Sampling or discharging bags/containers, dust release but contained with dust removal system sampling, discharge PAC.D9m : PROC 8b : Mixed with other substances : sampling or discharging bags/containers, dust release but contained with removal system sampling, discharge ERC 8a: Wide dispersive indoor use of processing aids in open systems ERC 8d: Wide dispersive outdoor use of processing aids in open systems	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29} If above technical control measures and personal protection are not feasible, then adopt following PPE: [PPE30]. Wear a full face respirator conforming to EN140 with Type A/P2 filter or better [PPE32].	0.833
PAC.D9w : PROC 8b : Moist or slurry(no dust) : sampling or discharging bags/containers, dedicated plants(no exposure) sampling, discharge ERC 8a: Wide dispersive indoor use of processing aids in open systems ERC 8d: Wide dispersive outdoor use of processing aids in open systems	No specific measures identified [EI18].	0.167

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Annex II: List of exposure scenarios covered

KG 30.2

Extruded carbon

Version: 2.0

Up-stream product of water-steam activated carbon:

Revision date: 11-01-2013

Industrial end-use of Activated Carbon, High Density Skeleton, powdered (PAC A1 through A17) as a component in a preparation including transfer from storage, pouring/unloading from drums or containers in batch or continuous operations, including storage, materials transfers, sampling.		
PAC.D10 : PROC 8a : Discharging bags/containers, dust released, no dust removal system PAC.D10m : PROC 8a : Mixed with other substances; discharging bags/containers, dust released, no dust removal system ERC 8a: Wide dispersive indoor use of processing aids in open systems ERC 8d: Wide dispersive outdoor use of processing aids in open systems	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29} If above technical control measures and personal protection are not feasible, then adopt following PPE: [PPE30]. Wear a full face respirator conforming to EN140 with Type A/P2 filter or better [PPE32].	0.833
PAC.D10w : PROC 8a : Moist or slurry (no dust) ; discharging bags/containers, exposure due to spillages ERC 8a: Wide dispersive indoor use of processing aids in open systems ERC 8d: Wide dispersive outdoor use of processing aids in open systems	No specific measures identified [EI18].	0.167
PAC.D11 : PROC 8a : Sampling of dry material, non-dedicated facilities PAC.D11m : PROC 8a : Mixed with other substances: sampling of material, non-dedicated facilities ERC 8a: Wide dispersive indoor use of processing aids in open systems ERC 8d: Wide dispersive outdoor use of processing aids in open systems	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29} If above technical control measures and personal protection are not feasible, then adopt following PPE: [PPE30]. Wear a full face respirator conforming to EN140 with Type A/P2 filter or better [PPE32].	0.833
PAC.D11w : PROC 8a : Moist or slurry(no dust): sampling of material, non-dedicated facilities ERC 8a: Wide dispersive indoor use of processing aids in open systems ERC 8d: Wide dispersive outdoor use of processing aids in open systems	No specific measures identified [EI18].	0.167
PAC.D12m : PROC 16 : Mixed with other substances: waste incineration with energy recovery ERC 9a: Wide dispersive indoor use of substances in closed systems	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29} If above technical control measures and personal protection are not feasible, then adopt following PPE: [PPE30]. Wear a full face respirator conforming to EN140 with Type A/P2 filter or better [PPE32].	
PAC.D13m : PROC 3 : Mixed with other substance(s): Transfer by suction of AC from filter into dedicated tank car ERC 8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC 8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.167
PAC.D14m: PROC 8a : Mixed with other substances, use in municipal swimming pools or aquaria ERC 8a: Wide dispersive indoor use of processing aids in open systems ERC 8d: Wide dispersive outdoor use of processing aids in open systems	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29} If above technical control measures and personal protection are not feasible, then adopt following PPE: [PPE30]. Wear a full face respirator conforming to EN140 with Type A/P2 filter or better [PPE32].	0.833
PAC.D15m/a : PROC 2 : Mixed with other substances, use in municipal swimming pools or aquaria ERC 8d: Wide dispersive outdoor use of processing aids in open systems	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.167
PAC.D15m/d : PROC 2 : Mixed with other substances, use in municipal swimming pools or aquaria ERC 8d: Wide dispersive outdoor use of processing aids in open systems	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.167

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Annex II: List of exposure scenarios covered

KG 30.2

Extruded carbon

Version: 2.0

Up-stream product of water-steam activated carbon:

Revision date: 11-01-2013

Industrial end-use of Activated Carbon, High Density Skeleton, powdered (PAC A1 through A17) as a component in a preparation including transfer from storage, pouring/unloading from drums or containers in batch or continuous operations, including storage, materials transfers, sampling.		
PAC.D16m : PROC 9 : use by medical / health professional in medical equipment ERC 8d: Wide dispersive outdoor use of processing aids in open systems ERC 8a: Wide dispersive indoor use of processing aids in open systems	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.667
PAC.D17 : PROC 8a : Coupling and uncoupling of flexible hose PAC.D17m : PROC 8a : Mixed with other substances, coupling and uncoupling of flexible hose ERC 8d: Wide dispersive outdoor use of processing aids in open systems	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29} If above technical control measures and personal protection are not feasible, then adopt following PPE: [PPE30]. Wear a full face respirator conforming to EN140 with Type A/P2 filter or better [PPE32].	0.833
PAC.D17w : PROC 8a : Moist or slurry, coupling and uncoupling of flexible hose ERC 8d: Wide dispersive outdoor use of processing aids in open systems	No specific measures identified [EI18].	0.167
PAC.D2m : PROC 5 : Mixed with other substance(s): activated carbon in the soil ERC 8d: Wide dispersive outdoor use of processing aids in open systems	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29} If above technical control measures and personal protection are not feasible, then adopt following PPE: [PPE30]. Wear a full face respirator conforming to EN140 with Type A/P2 filter or better [PPE32].	0.833
PAC.D3m : PROC 1 : Mixed with other substances: handling and use of articles without release – INDOOR ERC 9a: Wide dispersive indoor use of substances in closed systems	No specific measures identified [EI18].	0.033
PAC.D4m : PROC 1 : Mixed with other substances: handling and use of articles without release – OUTDOOR ERC 9b: Wide dispersive outdoor use of substances in closed systems	No specific measures identified [EI18].	0.033
PAC.D5 : PROC 1 : Handling/use in closed systems, no likelihood of exposure PAC.D5m : PROC 1 : mixed with other substances; handling/use in closed systems, no likelihood of exposure PAC.D5w : PROC 1 : Moist or slurry; handling/use in closed systems, no likelihood of exposure ERC 9a: Wide dispersive indoor use of substances in closed systems ERC 9b: Wide dispersive outdoor use of substances in closed systems	No specific measures identified [EI18].	0.033
PAC.D6 : PROC 2 : Handling/use in closed continuous system, occasional controlled exposure (sampling) PAC.D6m : PROC 2 : Mixed with other substances: handling/use in closed continuous system, occasional controlled exposure (sampling) ERC 8a: Wide dispersive indoor use of processing aids in open systems ERC 8d: Wide dispersive outdoor use of processing aids in open systems	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.167
PAC.D6w : PROC 2 : Moist or slurry (no dust): handling/use in closed continuous system, occasional controlled exposure (sampling) ERC 8a: Wide dispersive indoor use of processing aids in open systems ERC 8d: Wide dispersive outdoor use of processing aids in open systems	No specific measures identified [EI18].	0.003

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Annex II: List of exposure scenarios covered

KG 30.2

Extruded carbon

Version: 2.0

Up-stream product of water-steam activated carbon:

Revision date: 11-01-2013

Industrial end-use of Activated Carbon, High Density Skeleton, powdered (PAC A1 through A17) as a component in a preparation including transfer from storage, pouring/unloading from drums or containers in batch or continuous operations, including storage, materials transfers, sampling.		
PAC.D7 : PROC 3 : Handling/use in closed batch system, occasional controlled exposure (sampling) PAC.D7m : PROC 3 : Mixed with other substances : handling/use in closed batch system, occasional controlled exposure (sampling) ERC 8a: Wide dispersive indoor use of processing aids in open systems ERC 8d: Wide dispersive outdoor use of processing aids in open systems	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. If above technical control measures are not feasible, then adopt following PPE: [PPE30]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}	0.167
PAC.D7w : PROC 3 : Moist or slurry (no dust): handling/use in closed batch system, occasional controlled exposure (sampling) ERC 8a: Wide dispersive indoor use of processing aids in open systems ERC 8d: Wide dispersive outdoor use of processing aids in open systems	No specific measures identified [EI18].	0.033
PAC.D8 : PROC 4 : Handling/use in closed batch system, occasional controlled exposure (emitted dust) PAC.D8m : PROC 4 : Mixed with other substances : handling/use in closed batch system, occasional controlled exposure (emitted dust) during charging, sampling, discharge ERC 8a: Wide dispersive indoor use of processing aids in open systems ERC 8d: Wide dispersive outdoor use of processing aids in open systems	Provide extract ventilation to points where emissions occur [E54]. Provide extract ventilation to material transfer points and other openings [E82]. Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29} If above technical control measures and personal protection are not feasible, then adopt following PPE: [PPE30]. Wear a full face respirator conforming to EN140 with Type A/P2 filter or better [PPE32].	0.833
PAC.Ax : PROC 8a : Coupling and uncoupling of hose ERC 8a: Wide dispersive indoor use of processing aids in open systems ERC 8d: Wide dispersive outdoor use of processing aids in open systems	No specific measures identified [EI18].	0.167
Section 2.2		
Control of environmental exposure		
Product characteristics	There are no hazards potentially requiring control of risk related to environmental endpoints. This also supports the conclusion that there is no need to assess the indirect exposure of man via the environment through the oral route.	
Section 3 TBD		
Exposure Estimation		
3.1 Human Health	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. (G8) The ECETOC TRA tool has been used to estimate dermal workplace exposures unless otherwise indicated. (G21) Exposure levels can be calculated by multiplying the RCRs listed with the DNEL (2 mg/m ³).	
3.2 Environment	As no hazards are present, no exposure estimation is needed. The indirect exposure of man via ambient air (e.g. in the neighborhood of sites where a substance is manufactured or used) is not evaluated although it can not be excluded. In the Chemical Safety Assessment only systemic effects need to be considered. AC - HDS does not cause acute or long-term systemic effects.	
Section 4		
Guidance to check compliance with the exposure scenarios		
4.1 Health	Page 1 of appendix 2 provides a table which can be used to check compliance with the exposure scenarios. Effectiveness of RMMS and workplace exposure levels can be assess using proper industrial hygiene techniques.	
4.2 Environment	Not applicable based on absence of hazard.	
Section 5		
Other information		
5.1 Human Health	Low oxygen work procedure – Wet activated carbon depletes oxygen from air and, therefore, dangerously low levels of oxygen may be encountered. Whenever workers enter a vessel containing activated carbon, the vessels oxygen content should be determined and work procedures for potentially low oxygen areas should be followed.	
5.2 Environment	Spend activated carbon may contain contaminants which require is the following: Dispose of waste or used sacks/containers according to local regulations [ENV10].	

Safety Data Sheet

according to Regulation (EC) No 1907/2006 (REACH)

Annex II: List of exposure scenarios covered

KG 30.2

Extruded carbon

Version: 2.0

Up-stream product of water-steam activated carbon:

Revision date: 11-01-2013

Table 9 Consumer uses of non-powdered Activated Carbon

Identified Use (IU) name	Use descriptors	Risk characterization ratio (RCR)
NPAC: dry handling	Chemical product category (PC): PC 2: Adsorbents Environmental release category (ERC): ERC 8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix Subsequent service life relevant for that use?: no	0
NPAC: mixed with other substances, wet handling	Chemical product category (PC): PC 2: Adsorbents Environmental release category (ERC): ERC 8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix Subsequent service life relevant for that use?: no	0
NPAC, mixed with other substance(s): handling and use of articles without release -- INDOOR	Chemical product category (PC): PC 2: Adsorbents Environmental release category (ERC): ERC 9a: Wide dispersive indoor use of substances in closed systems Subsequent service life relevant for that use?: no	0
NPAC, mixed with other substance(s): handling and use of articles without release -- OUTDOOR	Chemical product category (PC): PC 2: Adsorbents Environmental release category (ERC): ERC 9b: Wide dispersive outdoor use of substances in closed systems Subsequent service life relevant for that use?: no	0
NPAC, mixed with other substance(s): handling and use of preparations or articles with release -- INDOOR	Chemical product category (PC): PC 2: Adsorbents Environmental release category (ERC): ERC 9a: Wide dispersive indoor use of substances in closed systems Subsequent service life relevant for that use?: no	0
NPAC, mixed with other substance(s): handling and use of preparations or articles with release -- OUTDOOR	Chemical product category (PC): PC 2: Adsorbents Environmental release category (ERC): ERC 9b: Wide dispersive outdoor use of substances in closed systems Subsequent service life relevant for that use?: no	0

Table 10 Consumer uses of powdered activated carbon

Identified Use (IU) name	Use descriptors	Risk characterization ratio (RCR)
PAC, mixed with other substance(s): handling and use of articles without release -- INDOOR	Chemical product category (PC): PC 2: Adsorbents Environmental release category (ERC): ERC 9a: Wide dispersive indoor use of substances in closed systems Subsequent service life relevant for that use?: no	0
PAC, mixed with other substance(s): handling and use of articles without release -- OUTDOOR	Chemical product category (PC): PC 2: Adsorbents Environmental release category (ERC): ERC 9b: Wide dispersive outdoor use of substances in closed systems Subsequent service life relevant for that use?: no	0
PAC, mixed with other substance(s): handling and use of preparations or articles with release -- INDOOR	Chemical product category (PC): PC 2: Adsorbents Environmental release category (ERC): ERC 8a: Wide dispersive indoor use of processing aids in open systems Subsequent service life relevant for that use?: no	0
PAC, mixed with other substance(s): handling and use of preparations or articles with release -- OUTDOOR	Chemical product category (PC): PC 2: Adsorbents Environmental release category (ERC): ERC 8d: Wide dispersive outdoor use of processing aids in open systems Subsequent service life relevant for that use?: no	0