

Varnostni list

MI 216

Varnostni list z dne 20/02/2023 revizija 2

Pozor: oštevilčenje se znova začne od 1.



ODDELEK 1: Identifikacija snovi/zmesi in družbe/podjetja

1.1 Identifikator izdelka

Identifikacija pripravka:

Komercialno ime: MI 216

Komercialna koda: 635

UFI: SHR1-A0UE-Q00G-QC5D

1.2 Pomembne identificirane uporabe snovi ali zmesi in odsvetovane uporabe

Priporočena uporaba: Malta na cementni osnovi

1.3 Podrobnosti o dobavitelju varnostnega lista

Dobavitelj FASSA Srl

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1.4 Telefonska številka za nujne primere

112 - Center za obveščanje (na voljo 24 ur)

ODDELEK 2: Določitev nevarnosti



2.1 Razvrstitev snovi ali zmesi

Uredba (ES) št. 1272/2008 (CLP)

| | |
|---------------|--|
| Skin Irrit. 2 | Povzroča draženje kože. |
| Eye Dam. 1 | Povzroča hude poškodbe oči. |
| Skin Sens. 1 | Lahko povzroči alergijski odziv kože. |
| STOT SE 3 | Lahko povzroči draženje dihalnih poti. |

Nevarnosti fizikalno-kemijskih lastnosti za zdravje ljudi in za okolje:

Ni drugih tveganj

2.2 Elementi etikete

Uredba (ES) št. 1272/2008 (CLP)

Piktogrami za nevarnost in Opozorilna beseda



Nevarno

Stavki o nevarnosti

| | |
|------|--|
| H315 | Povzroča draženje kože. |
| H317 | Lahko povzroči alergijski odziv kože. |
| H318 | Povzroča hude poškodbe oči. |
| H335 | Lahko povzroči draženje dihalnih poti. |

Previdnostni stavki

| | |
|----------------|---|
| P261 | Ne vdihavati prahu. |
| P280 | Nadenite si zaščitne rokavice in zaščitite oči/obraz. |
| P302+P352 | PRI STIKU S KOŽO: Umiti z veliko vode. |
| P305+P351+P338 | PRI STIKU Z OČMI: Previdno izpirati z vodo nekaj minut. Odstranite kontaktne leče, če jih imate in če to lahko storite brez težav. Nadaljujte z izpiranjem. |
| P310 | Takoj pokličite CENTER ZA ZASTRUPITVE/ zdravnika. |

Vsebuje:

Klinker Portlandskega cementa
Hidrirano apno

Posebne določbe v skladu s Prilogo XVII uredbe REACH in poznejše spremembe:

Nobeden

2.3 Druge nevarnosti

Ni snovi PBT, vPvB ali endokrinih motilcev v koncentraciji > = 0,1%.

Zmes ima nizko vsebnost kromatov. V obliki pripravka za uporabo je po dodatku vode vsebnost topnega kroma (VI) največ 2 mg/kg v suhi snovi. Nujen pogoj za nizko vsebnostjo kromatov je vsakem primeru pravilno shranjevanje, na suhem mestu in s spoštovanjem najdaljših predvidenih rokov hrambe. Odstotek vdihljivega kristalnega silicijevega oksida je nižji od 1 %. Zato za izdelek ne velja obveznost identifikacije. Vseeno pa je priporočljiva uporaba zaščitne dihal. Ni drugih tveganj

ODDELEK 3: Sestava/podatki o sestavinah

3.1 Snovi

ni znano

3.2 Zmesi

Identifikacija pripravka: MI 216

Nevarne sestavine, skladno z Uredbo CLP in njeno razvrstitvijo:

| Količina | Ime | Ident. št. | Razvrstitev | Registracijska številka |
|-------------|-------------------------------|--------------------------------|---|-------------------------|
| ≥30 - <50 % | Klinker Portlandskega cementa | CAS:65997-15-1 EC:266-043-4 | Skin Irrit. 2, H315; Eye Dam. 1, H318; Skin Sens. 1B, H317; STOT SE 3, H335 | Izvezeti |
| ≥1 - <3 % | Hidrirano apno | CAS:1305-62-0 EC:215-137-3 | Skin Irrit. 2, H315; Eye Dam. 1, H318; STOT SE 3, H335 | 01-2119475151-45-xxxx |

ODDELEK 4: Ukrepi za prvo pomoč

4.1 Opis ukrepov za prvo pomoč

V primeru stika s kožo:

Kontaminirana oblačila takoj slecite in jih na varen način odstranite.
V primeru stika s proizvodom in tudi v primeru suma morebitnega stika, dele telesa takoj umijte z veliko količino tekoče vode in milom.
TAKOJ SE POSVETUJTE Z ZDRAVNIKOM.

V primeru stika z očmi:

V primeru stika z očmi dovolj dolgo in z odprtimi očesnimi vekami izpirajte z obilo vode, nato poiščite pomoč zdravnika oftalmologa.
Poškodovano oko zaščitite.

V primeru zaužitja:

Po zaužitju ne izzivati bruhanja, takoj poiskati zdravniško pomoč in pokazati varnostni list in nalepko.

V primeru vdihavanja:

Prizadeto osebo umaknite na svež zrak in pustite počivati na toplem.
Če pride do zaužitja, takoj poiskati zdravniško pomoč in pokazati embalažo ali etiketo.

4.2 Najpomembnejši simptomi in učinki, akutni in zapozneli

Simptomi in učinki so taki, kot je pričakovano glede na nevarnosti, kar je prikazano v 2. razdelku.

4.3 Navedba kakršne koli takojšnje medicinske oskrbe in posebnega zdravljenja

V primeru nesreče ali slabega počutja takoj poiščite zdravniško pomoč (če je mogoče, pokažite navodila za uporabo ali varnostni list).

ODDELEK 5: Protipožarni ukrepi

5.1 Sredstva za gašenje

Ustrezna sredstva za gašenje:

CO2, gasilni aparat na prah, pena, pršenje z vodo.
Proizvod ni vnetljiv

Sredstva za gašenje, ki se jih iz varnostnih razlogov ne sme uporabljati:

Vodni curki

5.2 Posebne nevarnosti v zvezi s snovjo ali zmesjo

Pri gorenju nastajajo težki dimni plini.
V primeru požara in/ali eksplozije ne vdihavajte dima.

5.3 Nasvet za gasilce

- Uporabiti ustrezne dihalne naprave.
- Ločeno zberite kontaminirano vodo, uporabljeno za gašenje požara. Ne je izpustiti v kanalizacijo.
- Če je to varno izvedljivo, nepoškodovane vsebnike umaknite iz neposredno ogroženega območja.

ODDELEK 6: Ukrepi o nenamernih izpustih

6.1 Osebni varnostni ukrepi, zaščitna oprema in postopki v sili

- Nosite osebno varovalno opremo.
- V primeru izpostavljenosti hlapom/prahu/aerosolom nosite dihalne aparate.
- Omogočite primerno zračenje.
- Uporabite ustrezno zaščito dihal.
- Glejte v točki 7 in 8 navedene zaščitne ukrepe.
- Suho sesanje s primerno opremo.

6.2 Okoljevarstveni ukrepi

- Preprečite vstop v tla/podtalnico. Preprečite razlitje v površinske vode ali v kanalizacijo.
- V primeru puščanja plina ali razlitja v vodne tokove, tla ali kanalizacijo obvestite pristojne organe.

6.3 Metode in materiali za zadrževanje in čiščenje

- Po pobiranju z vodo izperite območje in prizadete materiale.
- Kontaminirano vodo za pranje shranite in odstranite.
- V primeru nenamernega razlitja proizvoda odstranite s suhim sesanjem.

6.4 Sklícivanje na druge oddelke

- Glejte tudi naslova 8 in 13

ODDELEK 7: Ravnanje in skladiščenje

7.1 Varnostni ukrepi za varno ravnanje

- Izogibajte se stiku s kožo in očmi ter vdihavanju prahu.
- Izogibajte se postopkom, ki povzročajo razširjanje prahu.
- Prazne vsebnike ne uporabite dokler niso očiščeni.
- Pred postopki prenosa se prepričajte, da v vsebnikih ni ostankov nezdružljivih materialov.

Nasveti o splošni higieni dela:

- Kontaminirana oblačila se mora pred vstopom v jedilnico zamenjati.
- Med delom ne jejte in ne pijte.
- Glejte tudi naslov 8 o priporočeni varovalni opremini.

7.2 Pogoji za varno skladiščenje, vključno z nezdružljivostjo

- Hranite stran od hrane, pijač in krme.

Nadzor topnega kroma (VI):

Za cemente, obdelane z redukcijskim sredstvom za krom (VI) v skladu s predpisi, navedenimi v oddelku 15, se učinkovitost redukcijskega sredstva s časom zmanjšuje. Zato pakiranje materiala vsebuje podatke o datumu proizvodnje, pogojih shranjevanja in ustreznem obdobju skladiščjenja, pri katerem se ohrani delovanje redukcijskega sredstva in obdrži vsebnost topnega kroma (VI) pod 2 ppm glede na skupno suho težo cementa, v skladu s EN 196-10.

Inkompaktibilne snovi:

- Glejte točko 10.5

Navodila za prostore:

- Primerno zračeni prostori.

7.3 Posebne končne uporabe

Priporočila

- Glejte točko 1.2

Specifične rešitve za industrijski sektor

- Nobena posebna uporaba

ODDELEK 8: Nadzor izpostavljenosti/osebna zaščita

8.1 Parametri nadzora

Seznam sestavin z OEL vrednostmi

| | Način izpostavljenosti na delovnem mestu | Država | Dolgotrajna mg/m3 | Dolgotrajne jša ppm | Kratkotrajn a mg/m3 | Kratkotrajn a ppm | Lastnosti | Opomb |
|--|--|--------|-------------------|---------------------|---------------------|-------------------|-----------|--|
| Klinker Portlandskega cementa CAS: 65997-15-1 | ACGIH | | 1 | | | | | (E,R), A4 - Pulm func, re symptoms, asthma |

| | | | | | | |
|----------------------------------|-------|-----------------|--------|--------|--------------|-----------------------|
| Hidrirano apno CAS: 1305-62-0 | MAK | AUSTRIA | 5.000 | 10.000 | | Inhalable aerosol |
| | VLEP | BELGIUM | 1.000 | | | Respirable fraction |
| | ÁK | HUNGARY | 10.000 | | | Inhalable fraction |
| | NDS | POLAND | 6.000 | | | Inhalable fraction |
| | NDS | POLAND | 2.000 | | | Respirable fraction |
| | VLA | SPAIN | 4.000 | | | Respirable fraction |
| | SUVA | SWITZERLAN D | 5.000 | | | Inhalable aerosol |
| | WEL | U.K. | 10.000 | | | Inhalable aerosol |
| | WEL | U.K. | 4.000 | | | Respirable aerosol |
| | GVI | CROATIA | 10.000 | | | Inhalable aerosol |
| | GVI | CROATIA | 4.000 | | | Respirable aerosol |
| | ACGIH | | 5.000 | | | Eye, URT and skin irr |
| | EU | | 1 | 4 | | Respirable fraction |
| | MAK | AUSTRIA | 1.000 | 4.000 | | Inhalable fraction |
| | VLEP | BELGIUM | 1.000 | 4.000 | | Respirable fraction |
| | VLEP | FRANCE | 1.000 | 4.000 | Informativen | Respirable fraction |
| | AGW | GERMANY | 1.000 | 2.000 | | Inhalable fraction |
| | MAK | GERMANY | 1.000 | 2.000 | | Inhalable fraction |
| | ÁK | HUNGARY | 5.000 | | | |
| | VLEP | ITALY | 1.000 | 2.000 | | Respirable fraction |
| | NDS | POLAND | 1.000 | 4.000 | | Respirable fraction |
| | VLEP | ROMANIA | 1.000 | 4.000 | | Respirable fraction |
| | VLA | SPAIN | 1.000 | 4.000 | | |
| | SUVA | SWITZERLAN D | 1.000 | 4.000 | | Inhalable fraction |
| | WEL | U.K. | 1.000 | | | Inhalable fraction |
| | VLE | PORTUGAL | 1.000 | 4.000 | | Respirable fraction |
| | GVI | CROATIA | 1.000 | 4.000 | | Respirable fraction |
| | MV | SLOVENIA | 1.000 | 4.000 | | |
| | TLV | CZECHIA | 1.000 | 4.000 | | Respirable fraction |
| | TLV | BULGARIA | 1.000 | 4.000 | | Respirable fraction |

Mejna vrednost izpostavljenosti po PNEC

| | PNEC Omejite | Način izpostavitve | Pogostost izpostavitve | Opombe |
|----------------------------------|-----------------|---|---------------------------|--------|
| Hidrirano apno CAS: 1305-62-0 | 0.49 mg/cm2 | Sladka voda | | |
| | 0.32 mg/cm2 | Morska voda | | |
| | 1080 mg/kg | Tla (kmetijska) | | |
| | 3 mg/cm2 | Mikroorganizmi v čistilnih napravah (STP) | | |

Izpeljane vrednosti brez učinka. (DNEL)

| | Industrijski delavec | Strokovni delavec | Uporabnik | Način izpostavitve | Pogostost izpostavitve | Opombe |
|----------------------------------|-------------------------|----------------------|-----------|-------------------------|---------------------------------|--------|
| Hidrirano apno CAS: 1305-62-0 | 4 mg/m3 | 4 mg/m3 | Z | Vdihavanje m, človek | Kratkotrajna, lokalni učinek | |
| | 1 mg/m3 | 1 mg/m3 | Z | Vdihavanje | Dolgotrajna, lokalni učinek | |

8.2 Nadzor izpostavljenosti

Poskrbite za ustrezno prezračevanje. Kadar je to izvedljivo, je to mogoče doseči z uporabo nadomestnega prezračevanja in dobrim splošnim vsesavanjem.

Zaščita oči:

Uporabite zaprt obrazni ščitnik, ne uporabljajte očal.

Zaščita kože:

Uporabljajte oblačila, primerna za popolno zaščito kože glede na dejavnost in izpostavljenost (EN 14605/EN 13982), npr. delovni kombinezon, predpasnik, zaščitna obutev, primerna oblačila.

Zaščita rok:

Ni materiala ali kombinacije materialov za rokavice, ki bi lahko zagotovili neomejeno odpornost na katero koli kombinacijo kemikalij ali proizvodov.

Za daljše ali večkratno rokovanje uporabite rokavice, odporne na kemikalije.

FKM (Fluórkaučuk): debelina ≥ 0.4 mm; permeacijski čas ≥ 480 min.; NBR (Nitrilkaučuk): debelina ≥ 0.4 mm; permeacijski čas ≥ 480 min.

Izbira primernih rokavic ni odvisna samo od materiala, temveč tudi od drugih kakovostnih lastnosti, ki se razlikujejo od enega do drugega proizvajalca, in od načinov ter časov uporabe mešanice.

Zaščita dihalnih poti:

Če so delavci izpostavljeni koncentracijam nad mejnimi vrednostmi izpostavljenosti, morajo uporabljati primerne, certificirane dihalne aparate.

Filtrirna naprava za prah (EN 143): maska s filtrom P2.

Kjer je prezračevanje nezadostno ali daljša izpostavljenost, uporabite varovalno opremo za dihalne organe.

Nadzor izpostavljenosti okolja:

Glejte točko 6.2

Higienski in tehnični ukrepi

Glejte poglavje 7.

ODDELEK 9: Fizikalne in kemijske lastnosti

9.1 Podatki o osnovnih fizikalnih in kemijskih lastnostih

Izgled: Prah

Barva: siv

Vonj: brez vonja

Tališče/ledišče: N.D.

Točka začetka vretja in interval vretja: N.D.

Vnetljivost: ni znano

Zgornja/spodnja meja vnetljivosti ali eksplozivnosti: N.D.

Plamenišče: ni znano

Temperatura samovžiga: N.D.

Temperatura razgradnje: N.D.

pH: $\geq 12.00 \leq 13.00$ (50% v vodni disperziji)

Kinematična viskoznost: ni znano

Gustota: 900-1000 kg/m³ (Interna metoda)

Gostota hlapov: N.A.

Parni tlak: N.D.

Topnost v vodi: delno topno

Topnost v olju: ni znano

Porazdelitveni koeficient (n-oktanol/voda): ni znano

Lastnosti delcev:

Na podlagi razpoložljivih podatkov izdelek ne vsebuje nanomaterialov.

9.2 Drugi podatki

Prevodnost: N.D.

Eksplozivne lastnosti: N.D.

Oksidativne lastnosti: N.D.

Hitrost izparevanja: ni znano

ODDELEK 10: Obstojnost in reaktivnost

10.1 Reaktivnost

Stabilna v normalnih pogojih

10.2 Kemijska stabilnost

Stabilna v normalnih pogojih

10.3 Možnost poteka nevarnih reakcij

Nobeden.

10.4 Pogoji, ki se jim je treba izogniti

Izdelek se boji vlage. Shranjujte v suhih prostorih.

10.5 Nezdružljivi materiali

Nobeno posebej.

Glejte točko 10.3

10.6 Nevarni produkti razgradnje

Nobena.

V primeru pravilnega skladiščenja in ravnanja ne pride do razvoja nevarnih produktov razgradnje.

Glejte točko 5.2

ODDELEK 11: Toksikološki podatki

11.1 Podatki o razredih nevarnosti, kakor so opredeljeni v Uredbi (ES) št. 1272/2008

Toksikološki podatki izdelka:

| | |
|---|---|
| a) akutna strupenost | Ni klasificirano Na podlagi razpoložljivih podatkov merila za razvrstitev niso izpolnjena. |
| b) jedkost za kožo/draženje kože | Proizvod je razvrščen: Skin Irrit. 2(H315) |
| c) resne okvare oči/draženje | Proizvod je razvrščen: Eye Dam. 1(H318) |
| d) preobčutljivost pri vdihavanju in preobčutljivost kože | Proizvod je razvrščen: Skin Sens. 1(H317) |
| e) mutagenost za zarodne celice | Ni klasificirano Na podlagi razpoložljivih podatkov merila za razvrstitev niso izpolnjena. |
| f) rakotvornost | Ni klasificirano Na podlagi razpoložljivih podatkov merila za razvrstitev niso izpolnjena. |
| g) strupenost za razmnoževanje | Ni klasificirano Na podlagi razpoložljivih podatkov merila za razvrstitev niso izpolnjena. |
| h) STOT - enkratna izpostavljenost | Proizvod je razvrščen: STOT SE 3(H335) |
| i) STOT - ponavljajoča se izpostavljenost | Ni klasificirano Na podlagi razpoložljivih podatkov merila za razvrstitev niso izpolnjena. |
| j) nevarnost pri vdihavanju | Ni klasificirano Na podlagi razpoložljivih podatkov merila za razvrstitev niso izpolnjena. |

Toksikološki podatki glavnih snovi, ki jih najdemo v izdelku:

| | | |
|-------------------------------|----------------------|--|
| Klinker Portlandskega cementa | a) akutna strupenost | LD50 Koža Zajec > 2000 mg/kg |
| Hidrirano apno | a) akutna strupenost | LD50 Oralno Podgana > 2000 mg/kg LD50 Koža Zajec > 2500 mg/kg |

11.2 Podatki o drugih nevarnostih

Lastnosti endokrinih motilcev:

Ni endokrinih motilcev v koncentraciji $\geq 0,1\%$.

ODDELEK 12: Ekološki podatki

Uporabljajte v skladu z dobrimi delovnimi navadami, izogibajte se odlaganju izdelka v okolju.

12.1 Strupenost

Ekotoksikološki podatki:

Ekotoksikoloških lastnosti izdelka

Ni razvrščeno kot nevarno za okolje

Za izdelek ni razpoložljivih podatkov

Seznam sestavin z ekotoksikološkimi lastnostmi

| Sestavina | Ident. št. | Ekotoksikološki podatki |
|----------------|---------------------------------------|---|
| Hidrirano apno | CAS: 1305-62-0 - EINECS: 215-137-3 | a) akutna strupenost za vodno okolje : LC50 Sladkovodne ribe 50.6 mg/l 96h a) akutna strupenost za vodno okolje : EC50 Sladkovodni nevretenčarji 49.1 mg/l 48h |

- a) akutna strupenost za vodno okolje : EC50 Sladkovodne alge 184.57 mg/l 72h
- b) kronična strupenost za vodno okolje : NOEC Morske nevretenčarje 32 mg/l - 14d
- b) kronična strupenost za vodno okolje : NOEC Sladkovodne alge 48 mg/l 72h
- a) akutna strupenost za vodno okolje : LC50 Morske ribe 457 mg/l 96h
- a) akutna strupenost za vodno okolje : LC50 Morske nevretenčarje 158 mg/l 96h
- d) strupenost za zemljo : NOEC Makroorganizme v tleh 2000 mg/kg
- d) strupenost za zemljo : NOEC Mikroorganizme v tleh 12000 mg/kg
- e) strupenost za rastline : NOEC 1080 mg/kg

12.2 Obstočnost in razgradljivost

ni znano

12.3 Zmožnost kopičenja v organizmih

ni znano

12.4 Mobilnost v tleh

ni znano

12.5 Rezultati ocene PBT in vPvB

Na podlagi razpoložljivih podatkov, preparat ne vsebuje snovi PBT/vPvB v procentu $\geq 0.1\%$.

12.6 Lastnosti endokrinih motilcev

Ni endokrinih motilcev v koncentraciji $\geq 0,1\%$.

12.7 Drugi škodljivi učinki

ni znano

ODDELEK 13: Odstranjevanje

13.1 Metode ravnanja z odpadki

Če je mogoče, predelajte. Pošljite v usposobljena odlagališča ali v zažig pod kontroliranimi pogoji. Ravnajte se po lokalnih in državnih normah.

Ne dopustite, da pride v kanalizacijo ali vodne poti.

Odstraniti posode, ki jih kontaminira izdelka v skladu z lokalnimi ali nacionalnimi predpisi.

ODDELEK 14: Podatki o prevozu

Blago ni nevarno smislu normativ o transportu.

14.1 Številka ZN in številka ID

ni znano

14.2 Pravilno odpremno ime ZN

ni znano

14.3 Razredi nevarnosti prevoza

ni znano

14.4 Skupina embalaže

ni znano

14.5 Nevarnosti za okolje

ni znano

14.6 Posebni previdnostni ukrepi za uporabnika

ni znano

Cestni in železniški transport (ADR-RID):

ni znano

Zračni transport (IATA):

ni znano

Morski transport (IMDG):

ni znano

14.7 Pomorski prevoz v razsutem stanju v skladu z instrumenti IMO

ni znano

ODDELEK 15: Zakonsko predpisani podatki

15.1 Predpisi/zakonodaja o zdravju, varnosti in okolju, specifični za snov ali zmes

Dir. 98/24/ES (Varovanje delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu)

Dir. 2000/39/ES (mejne vrednosti za poklicno izpostavljenost)

Direktiva 2010/75/EU

Uredba (ES) št. 1907/2006 (REACH)

Uredba (ES) št. 1272/2008 (CLP)

Uredba (ES) št. 790/2009 (1. ATP CLP) in (EU) št. 758/2013

Uredba (EU) 2020/878

Uredba (EU) št. 286/2011 (2. ATP CLP)

Uredba (EU) št. 618/2012 (3. ATP CLP)

Uredba (EU) št. 487/2013 (4. ATP CLP)

Uredba (EU) št. 944/2013 (5. ATP CLP)

Uredba (EU) št. 605/2014 (6. ATP CLP)

Uredba (EU) 2015/1221 (7. ATP CLP)

Uredba (EU) 2016/918 (8. ATP CLP)

Uredba (EU) 2016/1179 (9. ATP CLP)

Uredba (EU) 2017/776 (10. ATP CLP)

Uredba (EU) 2018/669 (11. ATP CLP)

Uredba (EU) 2018/1480 (13. ATP CLP)

Uredba (EU) 2019/521 (12. ATP CLP)

Uredba (EU) 2020/217 (14. ATP CLP)

Uredba (EU) 2020/1182 (15. ATP CLP)

Uredba (EU) 2021/643 (16. ATP CLP)

Uredba (EU) 2021/849 (17. ATP CLP)

Uredba (EU) 2022/692 (18. ATP CLP)

Omejitve, povezane z izdelkom ali vsebovanimi snovmi, v skladu s Prilogo XVII Uredbe (ES) 1907/2006 (REACH) in poznejše spremembe:

Obmedzenia vo vzťahu s výrobkom: Nobeden

Obmedzenia vo vzťahu s obsiahnutými látkami: 40, 75

Določbe v zvezi z direktivo EU 2012/18 (Seveso III)

Nobena

Uredba (EU) št. 649/2012 (uredba PIC)

Snovi niso navedene

Nemški razred nevarnosti za vodo.

1: Low hazard to waters

SVHC snovi:

Na podlagi razpoložljivih podatkov, preparat ne vsebuje snovi SVHC v procentu ≥ 0.1%.

15.2 Ocena kemijske varnosti

Ocena kemijske varnosti ni bila opravljena za mešanice

ODDELEK 16: Drugi podatki

| Številka | Opis |
|----------|--|
| H315 | Povzroča draženje kože. |
| H317 | Lahko povzroči alergijski odziv kože. |
| H318 | Povzroča hude poškodbe oči. |
| H335 | Lahko povzroči draženje dihalnih poti. |

| Številka | Razred in kategorija nevarnosti | Opis |
|----------|---------------------------------|--|
| 3.2/2 | Skin Irrit. 2 | Draženje kože, Kategorija 2 |
| 3.3/1 | Eye Dam. 1 | Hude poškodbe oči, Kategorija 1 |
| 3.4.2/1 | Skin Sens. 1 | Preobčutljivost kože, Kategorija 1 |
| 3.4.2/1B | Skin Sens. 1B | Preobčutljivost kože, Kategorija 1B |
| 3.8/3 | STOT SE 3 | Specifična strupenost za ciljne organe (STOT) – enkratna izpostavljenost STOT enkrat, Kategorija 3 |

Razvrstitev in postopek, uporabljen za izpeljavo razvrstitve za zmesi v skladu z Uredbo (ES) 1272/2008 [uredba CLP]:

Razvrstitev v skladu z Uredbo (ES) št. 1272/2008 Postopek razvrščanja

3.2/2 metoda izračuna

| | |
|---------|-----------------|
| 3.3/1 | metoda izračuna |
| 3.4.2/1 | metoda izračuna |
| 3.8/3 | metoda izračuna |

Ta dokument je pripravila pristojna oseba, ki je ustrezno usposobljena

Glavni bibliografski viri:

ECDIN – Informacijska mreža za okoljske podatke za kemikalije – Skupno raziskovalno središče, Komisija Evropskih skupnosti
 SAX – NEVARNE LASTNOSTI INDUSTRIJSKIH MATERIALOV – 8. izdaja – Van Nostrand Reinold
 Varnostni listi dobaviteljev surovin.
 CCNL - All. 1

Predstavljene informacije se nanašajo na naše znanje v zgoraj navedenem datumu. Nanašajo se zgolj na omenjeni izdelek in ne predstavljajo garancije za posebno kakovost.

Uporabnik je dolžan preveriti pravilnost in popolnost teh informacij glede na svojo specifično uporabo.

Ta list razveljavlja in nadomešča vsako predhodno izdajo

Legenda okrajšav in kratic, uporabljenih v varnostnem listu:

ACGIH: Ameriška konferenca vladnih industrijskih higienikov
 ADR: Evropski sporazum o mednarodnem prevozu nevarnih snovi v cestnem prometu.
 AND: Evropski sporazum o mednarodnem prevozu nevarnega blaga po celinskih plovni poteh
 ATE: Ocena akutne strupenosti
 ATEmix: Ocena akutne strupenosti (Zmesi)
 BCF: Biokonzentracijski faktor
 BEI: Biološki indeks izpostavljenosti
 BOD: Biokemijska potreba po kisiku
 CAS: Chemical Abstracts Service (oddelek Ameriškega kemijskega društva).
 CAV: Center za zastrupitve
 CE: Evropska skupnost
 CLP: Razvrščanje, etiketiranje, pakiranje.
 CMR: Rakotvorno, mutageno in strupeno za razmnoževanje
 COD: Kemijska potreba po kisiku
 COV: Hlapna organska spojina
 CSA: Ocena kemijske varnosti
 CSR: Poročilo o kemijski varnosti
 DMEL: Izpeljane vrednosti z minimalnim učinkom
 DNEL: Izpeljane vrednosti brez učinka.
 DPD: Direktiva o nevarnih pripravkih
 DSD: Direktiva o nevarnih snoveh
 EC50: Srednja učinkovita koncentracija
 ECHA: Evropska agencija za kemikalije
 EINECS: Evropski seznam obstoječih snovi.
 ES: Scenarij izpostavljenosti
 GefStoffVO: Odlok o nevarnih snoveh, Nemčija.
 GHS: Globalno poenoten sistem razvrščanja in označevanja nevarnih kemikalij.
 IARC: Mednarodna agencija za raziskovanje raka
 IATA: Mednarodno združenje za zračni transport.
 IATA-DGR: Predpis za prevoz nevarnih snovi v zračnem prometu "Mednarodnega združenja za zračni transport" (IATA).
 IC50: Srednja inhibitorna koncentracija
 ICAO: Mednarodna organizacija civilnega letalstva.
 ICAO-TI: Tehnična navodila "Mednarodne organizacije civilnega letalstva".
 IMDG: Mednarodni kodeks za prevoz nevarnega blaga po morju
 INCI: Mednarodna nomenklatura kozmetičnih sestavin.
 IRCCS: Znanstveni inštitut za raziskave, hospitalizacijo in zdravstveno nego
 KAFH: KAFH
 KSt: Koeficient eksplozivnosti.
 LC50: Letalna koncentracija za 50 odstotkov testne populacije.
 LD50: Letalna doza za 50 odstotkov testne populacije.
 LDLo: Najnižja smrtna doza
 N.A.: Se ne uporablja
 N/A: Se ne uporablja
 N/D: Ni opredeljeno/Ni razpoložljiv
 NA: Ni razpoložljivo
 NIOSH: Nacionalni inštitut za varnost in zdravje pri delu
 NOAEL: Raven brez opaznih negativnih vplivov
 OSHA: Upravljanje varnosti in zdravja pri delu

PBT: Obstojne, se kopičijo v organizmih in so strupene
PGK: Navodila za embalažo nevarnih snovi
PNEC: Predvidena koncentracija brez učinka.
PSG: Potniki
RID: Pravilnik o mednarodnem prevozu nevarnega blaga po železnici.
STEL: Meja za kratkotrajno izpostavljenost.
STOT: Specifično strupeno za ciljne organe.
TLV: Mejna vrednost izpostavljenosti.
TWATLV: Mejna vrednost izpostavljenosti v časovnem obdobju po 8 ur dnevno (ACGIH standard).
vPvB: Telo obstojno, se zelo lahko kopiči v organizmih.
WGK: Nemški razred nevarnosti za vodo.

Odstavki spremenjeni od prejšnje revizije:

- ODDELEK 1: Identifikacija snovi/zmesi in družbe/podjetja
- ODDELEK 2: Določitev nevarnosti
- ODDELEK 3: Sestava/podatki o sestavinah
- ODDELEK 4: Ukrepi za prvo pomoč
- ODDELEK 5: Protipožarni ukrepi
- ODDELEK 6: Ukrepi o nenamernih izpustih
- ODDELEK 7: Ravnanje in skladiščenje
- ODDELEK 8: Nadzor izpostavljenosti/osebna zaščita
- ODDELEK 9: Fizikalne in kemijske lastnosti
- ODDELEK 10: Obstojnost in reaktivnost
- ODDELEK 11: Toksikološki podatki
- ODDELEK 12: Ekološki podatki
- ODDELEK 13: Odstranjevanje
- ODDELEK 14: Podatki o prevozu
- ODDELEK 15: Zakonsko predpisani podatki

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EXPOSURE SCENARIOS

The current document includes all relevant occupational and environmental exposure scenarios (ES) for the production and use of calcium dihydroxide as required under the REACH Regulation (Regulation (EC) No 1907/2006). For the development of the ES the Regulation and the relevant REACH Guidance have been considered. For the description of the covered uses and processes, the "R.12 – Use descriptor system" guidance (Version: 2, March 2010, ECHA-2010-G-05-EN), for the description and implementation of risk management measures (RMM) the "R.13 – Risk management measures" guidance (Version: 1.1, May 2008), for the occupational exposure estimation the "R.14 – Occupational exposure estimation" guidance (Version: 2, May 2010, ECHA-2010-G-09-EN) and for the actual environmental exposure assessment the "R.16 – Environmental Exposure Assessment" (Version: 2, May 2010, ECHA-10-G-06-EN) was used.

Methodology used for environmental exposure assessment

The environmental exposure scenarios only address the assessment at the local scale, including municipal sewage treatment plants (STPs) or industrial waste water treatment plants (WWTPs) when applicable, for industrial and professional uses as any effects that might occur is expected to take place on a local scale.

1) Professional uses (local scale)

The exposure and risk assessment is only relevant for the aquatic and terrestrial environment. The aquatic effect and risk assessment is determined by the pH effect. Nevertheless, the classical risk characterisation ratio (RCR), based on PEC (predicted environmental concentration) and PNEC (predicted no effect concentration) is calculated. The professional uses on a local scale refer to applications on agricultural or urban soil. The environmental exposure is assessed based on data and a modelling tool. The modelling FOCUS/ Exposit tool is used to assess terrestrial and aquatic exposure (typically conceived for biocidal applications).

Details and scaling approach indications are reported in the specific scenarios.

Methodology used for occupational exposure assessment

By definition an exposure scenario (ES) has to describe under which operational conditions (OC) and risk management measure (RMMs) the substance can be handled safely. This is demonstrated if the estimated exposure level is below the respective derived no-effect level (DNEL), which is expressed in the risk characterisation ratio (RCR). For workers, the repeated dose DNEL for inhalation as well as the acute DNEL for inhalation are based on the respective recommendations of the scientific committee on occupational exposure limits (SCOEL) being 1 mg/m³ and 4 mg/m³, respectively.

In cases where neither measured data nor analogous data are available, human exposure is assessed with the aid of a modelling tool. At the first tier screening level, the MEASE tool (<http://www.ebrc.de/mease.html>) is used to assess inhalation exposure according to the ECHA guidance (R.14).

Since the SCOEL recommendation refers to respirable dust while the exposure estimates in MEASE reflect the inhalable fraction, an additional safety margin is inherently included in the exposure scenarios below when MEASE has been used to derive exposure estimates.

Methodology used for consumer exposure assessment

By definition an ES has to describe under which conditions the substances, preparation or articles can be handled safely. In cases where neither measured data nor analogous data are available, exposure is assessed with the aid of a modelling tool.

Version: 1.0/EN

Revision date: February 2013

Printing Date: May 2015

For consumers, the repeated dose DNEL for inhalation as well as the acute DNEL for inhalation are based on the respective recommendations of the Scientific Committee on Occupational Exposure Limits (SCOEL), being 1 mg/m^3 and 4 mg/m^3 , respectively.

For inhalation exposure to powders the data, derived from van Hemmen (van Hemmen, 1992: Agricultural pesticide exposure data bases for risk assessment. Rev Environ Contam Toxicol. 126: 1-85.), has been used to calculate the inhalation exposure. The inhalation exposure for consumers is estimated at $15 \text{ } \mu\text{g/hr}$ or $0.25 \text{ } \mu\text{g/min}$. For larger tasks the inhalation exposure is expected to be higher. A factor of 10 is suggested when the product amount exceeds 2.5 kg, resulting in the inhalation exposure of $150 \text{ } \mu\text{g/hr}$. To convert these values in mg/m^3 a default value of $1.25 \text{ m}^3/\text{hr}$ for the breathing volume under light working conditions will be assumed (van Hemmen, 1992) giving $12 \text{ } \mu\text{g/m}^3$ for small tasks and $120 \text{ } \mu\text{g/m}^3$ for larger tasks.

When the preparation or substance is applied in granular form or as tablets, reduced exposure to dust was assumed. To take this into account if data about particle size distribution and attrition of the granule are lacking, the model for powder formulations is used, assuming a reduction in dust formation by 10 % according to Becks and Falks (Manual for the authorisation of pesticides. Plant protection products. Chapter 4 Human toxicology; risk operator, worker and bystander, version 1.0., 2006).

For dermal exposure and exposure to the eye a qualitative approach has been followed, as no DNEL could be derived for this route due to the irritating properties of calcium oxide. Oral exposure was not assessed as this is not a foreseeable route of exposure regarding the uses addressed.

Since the SCOEL recommendation refers to respirable dust while the exposure estimates by the model from van Hemmen reflect the inhalable fraction, an additional safety margin is inherently included in the exposure scenarios below, i.e. the exposure estimates are very conservative.

The exposure assessment of calcium dihydroxide professional and industrial and consumer use is performed and organized based on several scenarios. An overview of the scenarios and the coverage of substance life cycle is presented in Table 1.

Version: 1.0/EN

Revision date: February 2013

Printing Date: May 2015

Table 1: Overview on exposure scenarios and coverage of substance life cycle

| ES number | Exposure scenario title | Manufacture | Identified uses | | | Resulting life cycle stage Service life (for articles) | Linked to Identified Use | Sector of use category (SU) | Chemical Product Category (PC) | Process category (PROC) | Article category (AC) | Environmental release category (ERC) |
|-----------|---|-------------|-----------------|---------|----------|---|--------------------------|---|---|--|------------------------------------|--|
| | | | Formulation | End use | Consumer | | | | | | | |
| 9.1 | Manufacture and industrial uses of aqueous solutions of lime substances | X | X | X | | X | 1 | 3; 1, 2a, 2b, 4, 5, 6a, 6b, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 23, 24 | 1, 2, 3, 7, 8, 9a, 9b, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40 | 1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19 | 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13 | 1, 2, 3, 4, 5, 6a, 6b, 6c, 6d, 7, 12a, 12b, 10a, 10b, 11a, 11b |
| 9.2 | Manufacture and industrial uses of low dusty solids/powders of lime substances | X | X | X | | X | 2 | 3; 1, 2a, 2b, 4, 5, 6a, 6b, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 23, 24 | 1, 2, 3, 7, 8, 9a, 9b, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40 | 1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 13, 14, 15, 16, 17, 18, 19, 21, 22, 23, 24, 25, 26, 27a, 27b | 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13 | 1, 2, 3, 4, 5, 6a, 6b, 6c, 6d, 7, 12a, 12b, 10a, 10b, 11a, 11b |
| 9.3 | Manufacture and industrial uses of medium dusty solids/powders of lime substances | X | X | X | | X | 3 | 3; 1, 2a, 2b, 4, 5, 6a, 6b, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 23, 24 | 1, 2, 3, 7, 8, 9a, 9b, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40 | 1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 14, 15, 16, 17, 18, 19, 22, 23, 24, 25, 26, 27a, 27b | 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13 | 1, 2, 3, 4, 5, 6a, 6b, 6c, 6d, 7, 12a, 12b, 10a, 10b, 11a, 11b |

Version: 1.0/EN

Revision date: February 2013

Printing Date: May 2015

| ES number | Exposure scenario title | Manufacture | Identified uses | | | Resulting life cycle stage Service life (for articles) | Linked to Identified Use | Sector of use category (SU) | Chemical Product Category (PC) | Process category (PROC) | Article category (AC) | Environmental release category (ERC) |
|-----------|---|-------------|-----------------|---------|----------|---|--------------------------|---|---|---|------------------------------------|--|
| | | | Formulation | End use | Consumer | | | | | | | |
| 9.4 | Manufacture and industrial uses of high dusty solids/powders of lime substances | X | X | X | | X | 4 | 3; 1, 2a, 2b, 4, 5, 6a, 6b, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 23, 24 | 1, 2, 3, 7, 8, 9a, 9b, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40 | 1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 14, 15, 16, 17, 18, 19, 22, 23, 24, 25, 26, 27a, 27b | 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13 | 1, 2, 3, 4, 5, 6a, 6b, 6c, 6d, 7, 12a, 12b, 10a, 11a |
| 9.5 | Manufacture and industrial uses of massive objects containing lime substances | X | X | X | | X | 5 | 3; 1, 2a, 2b, 4, 5, 6a, 6b, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 23, 24 | 1, 2, 3, 7, 8, 9a, 9b, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40 | 6, 14, 21, 22, 23, 24, 25 | 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13 | 1, 2, 3, 4, 5, 6a, 6b, 6c, 6d, 7, 12a, 12b, 10a, 10b, 11a, 11b |
| 9.6 | Professional uses of aqueous solutions of lime substances | | X | X | | X | 6 | 22; 1, 5, 6a, 6b, 7, 10, 11, 12, 13, 16, 17, 18, 19, 20, 23, 24 | 1, 2, 3, 7, 8, 9a, 9b, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40 | 2, 3, 4, 5, 8a, 8b, 9, 10, 12, 13, 15, 16, 17, 18, 19 | 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13 | 2, 8a, 8b, 8c, 8d, 8e, 8f |

Version: 1.0/EN

Revision date: February 2013

Printing Date: May 2015

| ES number | Exposure scenario title | Manufacture | Identified uses | | | Resulting life cycle stage Service life (for articles) | Linked to Identified Use | Sector of use category (SU) | Chemical Product Category (PC) | Process category (PROC) | Article category (AC) | Environmental release category (ERC) |
|-----------|---|-------------|-----------------|---------|----------|---|--------------------------|---|---|---|------------------------------------|---|
| | | | Formulation | End use | Consumer | | | | | | | |
| 9.7 | Professional uses of low dusty solids/powders of lime substances | | X | X | | X | 7 | 22; 1, 5, 6a, 6b, 7, 10, 11, 12, 13, 16, 17, 18, 19, 20, 23, 24 | 1, 2, 3, 7, 8, 9a, 9b, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40 | 2, 3, 4, 5, 8a, 8b, 9, 10, 13, 15, 16, 17, 18, 19, 21, 25, 26 | 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13 | 2, 8a, 8b, 8c, 8d, 8e, 8f |
| 9.8 | Professional uses of medium dusty solids/powders of lime substances | | X | X | | X | 8 | 22; 1, 5, 6a, 6b, 7, 10, 11, 12, 13, 16, 17, 18, 19, 20, 23, 24 | 1, 2, 3, 7, 8, 9a, 9b, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40 | 2, 3, 4, 5, 8a, 8b, 9, 10, 13, 15, 16, 17, 18, 19, 25, 26 | 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13 | 2, 8a, 8b, 8c, 8d, 8e, 8f, 9a, 9b |
| 9.9 | Professional uses of high dusty solids/powders of lime substances | | X | X | | X | 9 | 22; 1, 5, 6a, 6b, 7, 10, 11, 12, 13, 16, 17, 18, 19, 20, 23, 24 | 1, 2, 3, 7, 8, 9a, 9b, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40 | 2, 3, 4, 5, 8a, 8b, 9, 10, 13, 15, 16, 17, 18, 19, 25, 26 | 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13 | 2, 8a, 8b, 8c, 8d, 8e, 8f |

Version: 1.0/EN

Revision date: February 2013

Printing Date: May 2015

| ES number | Exposure scenario title | Manufacture | Identified uses | | | Resulting life cycle stage Service life (for articles) | Linked to Identified Use | Sector of use category (SU) | Chemical Product Category (PC) | Process category (PROC) | Article category (AC) | Environmental release category (ERC) |
|-----------|---|-------------|-----------------|---------|----------|---|--------------------------|---|-----------------------------------|----------------------------|------------------------------------|---|
| | | | Formulation | End use | Consumer | | | | | | | |
| 9.10 | Professional use of lime substances in soil treatment | | X | X | | | 10 | 22 | 9b | 5, 8b, 11, 26 | | 2, 8a, 8b, 8c, 8d, 8e, 8f |
| 9.11 | Professional uses of articles/containers containing lime substances | | | X | | X | 11 | 22; 1, 5, 6a, 6b, 7, 10, 11, 12, 13, 16, 17, 18, 19, 20, 23, 24 | | 0, 21, 24, 25 | 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13 | 10a, 11a, 11b, 12a, 12b |
| 9.12 | Consumer use of building and construction material (DIY) | | | | X | | 12 | 21 | 9b, 9a | | | 8 |
| 9.13 | Consumer use of CO_2 absorbent in breathing apparatuses | | | | X | | 13 | 21 | 2 | | | 8 |

Version: 1.0/EN

Revision date: February 2013

Printing Date: May 2015

| ES number | Exposure scenario title | Manufacture | Identified uses | | | Resulting life cycle stage Service life (for articles) | Linked to Identified Use | Sector of use category (SU) | Chemical Category (PC) Product | Process category (PROC) | Article category (AC) | Environmental release category (ERC) |
|-----------|---|-------------|-----------------|---------|----------|---|--------------------------|--------------------------------|-----------------------------------|-------------------------|-----------------------|--------------------------------------|
| | | | Formulation | End use | Consumer | | | | | | | |
| 9.14 | Consumer use of garden lime/fertilizer | | | | X | | 14 21 | | 20, 12 | | | 8e |
| 9.15 | Consumer use of lime substances as water treatment chemicals in aquaria | | | | X | | 15 21 | | 20, 37 | | | 8 |
| 9.16 | Consumer use of cosmetics containing lime substances | | | | X | | 16 21 | | 39 | | | 8 |

Version: 1.0/EN

Revision date: February 2013

Printing Date: May 2015

ES number 9.9: Professional uses of high dusty solids/ powders of lime substances

| Exposure Scenario Format (1) addressing uses carried out by workers | | |
|---|---|---|
| 1. Title | | |
| Free short title | Professional uses of high dusty solids/powders of lime substances | |
| Systematic based on descriptor | title use | SU22, SU1, SU5, SU6a, SU6b, SU7, SU10, SU11, SU12, SU13, SU16, SU17, SU18, SU19, SU20, SU23, SU24 PC1, PC2, PC3, PC7, PC8, PC9a, PC9b, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21, PC23, PC24, PC25, PC26, PC27, PC28, PC29, PC30, PC31, PC32, PC33, PC34, PC35, PC36, PC37, PC39, PC40 AC1, AC2, AC3, AC4, AC5, AC6, AC7, AC8, AC10, AC11, AC13 (appropriate PROCs and ERCs are given in Section 2 below) |
| Processes, tasks and/or activities covered | Processes, tasks and/or activities covered are described in Section 2 below. | |
| Assessment Method | The assessment of inhalation exposure is based on the exposure estimation tool MEASE. The environmental assessment is based on FOCUS-Exposit. | |
| 2. Operational conditions and risk management measures | | |
| PROC/ERC | REACH definition | Involved tasks |
| PROC 2 | Use in closed, continuous process with occasional controlled exposure | Further information is provided in the ECHA Guidance on information requirements and chemical safety assessment, Chapter R.12: Use descriptor system (ECHA-2010-G-05-EN). |
| PROC 3 | Use in closed batch process (synthesis or formulation) | |
| PROC 4 | Use in batch and other process (synthesis) where opportunity for exposure arises | |
| PROC 5 | Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) | |
| PROC 8a | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities | |
| PROC 8b | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities | |
| PROC 9 | Transfer of substance or preparation into small containers (dedicated filling line, including weighing) | |
| PROC 10 | Roller application or brushing | |
| PROC 11 | Non industrial spraying | |
| PROC 13 | Treatment of articles by dipping and pouring | |
| PROC 15 | Use as laboratory reagent | |
| PROC 16 | Using material as fuel sources, limited exposure to unburned product to be expected | |
| PROC 17 | Lubrication at high energy conditions and in partly open process | |
| PROC 18 | Greasing at high energy conditions | |
| PROC 19 | Hand-mixing with intimate contact and only PPE available | |
| PROC 25 | Other hot work operations with metals | |
| PROC 26 | Handling of solid inorganic substances at ambient temperature | |
| ERC2, ERC8b, ERC8d, ERC8f | ERC8a, ERC8c, ERC8e | Wide dispersive indoor and outdoor use of reactive substances or processing aids in open systems |

Version: 1.0/EN

Revision date: February 2013

Printing Date: May 2015

2.1 Control of workers exposure

Product characteristic

According to the MEASE approach, the substance-intrinsic emission potential is one of the main exposure determinants. This is reflected by an assignment of a so-called fugacity class in the MEASE tool. For operations conducted with solid substances at ambient temperature the fugacity is based on the dustiness of that substance. Whereas in hot metal operations, fugacity is temperature based, taking into account the process temperature and the melting point of the substance. As a third group, high abrasive tasks are based on the level of abrasion instead of the substance intrinsic emission potential.

| PROC | Use in preparation | Content in preparation | Physical form | Emission potential |
|----------------------|--------------------|------------------------|---------------|--------------------|
| All applicable PROCs | not restricted | | solid/powder | high |

Amounts used

The actual tonnage handled per shift is not considered to influence the exposure as such for this scenario. Instead, the combination of the scale of operation (industrial vs. professional) and level of containment/automation (as reflected in the PROC) is the main determinant of the process intrinsic emission potential.

Frequency and duration of use/exposure

| PROC | Duration of exposure |
|--|------------------------------|
| PROC 4, 5, 8a, 8b, 9, 10, 16, 17, 18, 19, 26 | ≤ 240 minutes |
| PROC 11 | ≤ 60 minutes |
| All other applicable PROCs | 480 minutes (not restricted) |

Human factors not influenced by risk management

The shift breathing volume during all process steps reflected in the PROCs is assumed to be 10 m³/shift (8 hours).

Other given operational conditions affecting workers exposure

Operational conditions like process temperature and process pressure are not considered relevant for occupational exposure assessment of the conducted processes. In process steps with considerably high temperatures (i.e. PROC 22, 23, 25), the exposure assessment in MEASE is however based on the ratio of process temperature and melting point. As the associated temperatures are expected to vary within the industry the highest ratio was taken as a worst case assumption for the exposure estimation. Thus all process temperatures are automatically covered in this exposure scenario for PROC 22, 23 and PROC 25.

Technical conditions and measures at process level (source) to prevent release

Risk management measures at the process level (e.g. containment or segregation of the emission source) are generally not required in the processes.

Technical conditions and measures to control dispersion from source towards the worker

| PROC | Level of separation | Localised controls (LC) | Efficiency of LC (according to MEASE) | Further information |
|----------------------------------|--|--------------------------------------|---------------------------------------|---|
| PROC 4, 5, 8a, 8b, 9, 11, 16, 26 | Any potentially required separation of workers from the emission source is indicated above under "Frequency and duration of exposure". A reduction of exposure duration can be achieved, for example, by the installation of ventilated (positive pressure) control rooms or by removing the worker from workplaces involved with relevant exposure. | generic local exhaust ventilation | 72 % | - |
| PROC 17, 18 | | integrated local exhaust ventilation | 87 % | - |
| PROC 19 | | not applicable | na | only in well ventilated rooms or outdoors (efficiency 50 %) |
| All other applicable PROCs | | not required | na | - |

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid inhalation or ingestion. General occupational hygiene measures are required to ensure a safe handling of the substance. These measures involve good personal and housekeeping practices (i.e. regular cleaning with suitable cleaning devices), no eating and smoking at the workplace, the wearing of standard working clothes and shoes unless otherwise stated below. Shower and change clothes at end of work shift. Do not wear contaminated clothing at home. Do not blow dust off with compressed air.

Version: 1.0/EN

Revision date: February 2013

Printing Date: May 2015

| Conditions and measures related to personal protection, hygiene and health evaluation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|--|---|--|--------------|----------------|-------------|-----------------|---|-----|----|---|---|----|----|---|---|----|----|---|----|----|----|---|----|----|----|---|----|----|----|---|
| PROC | Specification of respiratory protective equipment (RPE) | RPE efficiency (assigned protection factor, APF) | Specification of gloves | Further personal protective equipment (PPE) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PROC 9, 26 | FFP1 mask | APF=4 | Since calcium dihydroxide is classified as irritating to skin, the use of protective gloves is mandatory for all process steps. | Eye protection equipment (e.g. goggles or visors) must be worn, unless potential contact with the eye can be excluded by the nature and type of application (i.e. closed process). Additionally, face protection, protective clothing and safety shoes are required to be worn as appropriate. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PROC 11, 17, 18, 19 | FFP3 mask | APF=20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PROC 25 | FFP2 mask | APF=10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| All other applicable PROCs | FFP2 mask | APF=10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Any RPE as defined above shall only be worn if the following principles are implemented in parallel: The duration of work (compare with "duration of exposure" above) should reflect the additional physiological stress for the worker due to the breathing resistance and mass of the RPE itself, due to the increased thermal stress by enclosing the head. In addition, it shall be considered that the worker's capability of using tools and of communicating are reduced during the wearing of RPE. For reasons as given above, the worker should therefore be (i) healthy (especially in view of medical problems that may affect the use of RPE), (ii) have suitable facial characteristics reducing leakages between face and mask (in view of scars and facial hair). The recommended devices above which rely on a tight face seal will not provide the required protection unless they fit the contours of the face properly and securely.</p> <p>The employer and self-employed persons have legal responsibilities for the maintenance and issue of respiratory protective devices and the management of their correct use in the workplace. Therefore, they should define and document a suitable policy for a respiratory protective device programme including training of the workers.</p> <p>An overview of the APFs of different RPE (according to BS EN 529:2005) can be found in the glossary of MEASE.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| - only relevant for agricultural soil protection | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Product characteristics | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Drift: 1% (very worst-case estimate based on data from dust measurements in air as a function of the distance from application)</p> <div><p>Quantity of dust per m3 (in mg)</p><p>Wind speed:</p><ul style="list-style-type: none">- 3.5 m/s- 6 m/s- 3.5 m/s<p>Distance from the spreader (in m)</p><table border="1"><caption>Dust concentration data (mg/m³) vs Distance (m)</caption><thead><tr><th>Distance (m)</th><th>3.5 m/s (Blue)</th><th>6 m/s (Red)</th><th>3.5 m/s (Green)</th></tr></thead><tbody><tr><td>1</td><td>105</td><td>65</td><td>5</td></tr><tr><td>3</td><td>90</td><td>30</td><td>5</td></tr><tr><td>7</td><td>25</td><td>15</td><td>5</td></tr><tr><td>11</td><td>60</td><td>10</td><td>5</td></tr><tr><td>15</td><td>35</td><td>10</td><td>5</td></tr><tr><td>20</td><td>30</td><td>10</td><td>5</td></tr></tbody></table></div> <p>(Figure taken from: Laudet, A. et al., 1999)</p> | | | | | Distance (m) | 3.5 m/s (Blue) | 6 m/s (Red) | 3.5 m/s (Green) | 1 | 105 | 65 | 5 | 3 | 90 | 30 | 5 | 7 | 25 | 15 | 5 | 11 | 60 | 10 | 5 | 15 | 35 | 10 | 5 | 20 | 30 | 10 | 5 |
| Distance (m) | 3.5 m/s (Blue) | 6 m/s (Red) | 3.5 m/s (Green) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 105 | 65 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 90 | 30 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | 25 | 15 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | 60 | 10 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | 35 | 10 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | 30 | 10 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Amounts used | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ca(OH)2 | 2,244 kg/ha | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Frequency and duration of use | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 day/year (one application per year). Multiple applications during the year are allowed, provided the total yearly amount of 2,244 kg/ha is not exceeded (CaOH2) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Version: 1.0/EN

Revision date: February 2013

Printing Date: May 2015

| Environment factors not influenced by risk management | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------------|--------------------------------|-----------------|---------------|-----------------|---|-----|----|----|---|----|----|----|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Volume of surface water: 300 L/m2 Field surface area: 1 ha | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other given operational conditions affecting environmental exposure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Outdoor use of products Soil mixing depth: 20 cm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical conditions and measures at process level (source) to prevent release | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| There are no direct releases to adjacent surface waters. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical conditions and measures to reduce or limit discharges, air emissions and releases to soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Drift should be minimised. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Organizational measures to prevent/limit release from site | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| In line with the requirements for good agricultural practice, agricultural soil should be analysed prior to application of lime and the application rate should be adjusted according to the results of the analysis. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.2 Control of environmental exposure – only relevant for soil treatment in civil engineering | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Product characteristics | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Drift: 1% (very worst-case estimate based on data from dust measurements in air as a function of the distance from application) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div>Quantity of dust per m3 (in mg)</div><div><p>Wind speed:</p><ul style="list-style-type: none">- 3.5 m/s- 6 m/s- 3.5 m/s<p>Distance from the spreader (in m)</p><table border="1"><caption>Estimated data from the graph</caption><thead><tr><th>Distance from the spreader (m)</th><th>3.5 m/s (mg/m³)</th><th>6 m/s (mg/m³)</th><th>3.5 m/s (mg/m³)</th></tr></thead><tbody><tr><td>1</td><td>100</td><td>60</td><td>10</td></tr><tr><td>3</td><td>90</td><td>30</td><td>10</td></tr><tr><td>7</td><td>30</td><td>15</td><td>10</td></tr><tr><td>11</td><td>60</td><td>10</td><td>10</td></tr><tr><td>15</td><td>40</td><td>10</td><td>10</td></tr><tr><td>20</td><td>30</td><td>10</td><td>10</td></tr></tbody></table></div></div> <div>(Figure taken from: Laudet, A. et al., 1999)</div> | | Distance from the spreader (m) | 3.5 m/s (mg/m³) | 6 m/s (mg/m³) | 3.5 m/s (mg/m³) | 1 | 100 | 60 | 10 | 3 | 90 | 30 | 10 | 7 | 30 | 15 | 10 | 11 | 60 | 10 | 10 | 15 | 40 | 10 | 10 | 20 | 30 | 10 | 10 |
| Distance from the spreader (m) | 3.5 m/s (mg/m³) | 6 m/s (mg/m³) | 3.5 m/s (mg/m³) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 100 | 60 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 90 | 30 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | 30 | 15 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | 60 | 10 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | 40 | 10 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | 30 | 10 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Amounts used | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ca(OH)2 | 238,208 kg/ha | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Frequency and duration of use | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 day/year and only once in a lifetime. Multiple applications during the year are allowed, provided the total yearly amount of 238,208 kg/ha is not exceeded (CaOH2) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Environment factors not influenced by risk management | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Field surface area: 1 ha | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other given operational conditions affecting environmental exposure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Outdoor use of products Soil mixing depth: 20 cm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Version: 1.0/EN

Revision date: February 2013

Printing Date: May 2015

| Technical conditions and measures at process level (source) to prevent release | | | | |
|--|--|------------------------------------|---|--------------------------------|
| Lime is only applied onto the soil in the technosphere zone before road construction. There are no direct releases to adjacent surface waters. | | | | |
| Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil | | | | |
| Drift should be minimised. | | | | |
| 3. Exposure estimation and reference to its source | | | | |
| Occupational exposure | | | | |
| The exposure estimation tool MEASE was used for the assessment of inhalation exposure. The risk characterisation ratio (RCR) is the quotient of the refined exposure estimate and the respective DNEL (derived no-effect level) and has to be below 1 to demonstrate a safe use. For inhalation exposure, the RCR is based on the DNEL for calcium dihydroxide of 1 mg/m ³ (as respirable dust) and the respective inhalation exposure estimate derived using MEASE (as inhalable dust). Thus, the RCR includes an additional safety margin since the respirable fraction being a sub-fraction of the inhalable fraction according to EN 481. | | | | |
| PROC | Method used for inhalation exposure assessment | Inhalation exposure estimate (RCR) | Method used for dermal exposure assessment | Dermal exposure estimate (RCR) |
| PROC 2, 3, 4, 5, 8a, 8b, 9, 10, 11, 13, 15, 16, 17, 18, 19, 25, 26 | MEASE | <1 mg/m ³ (0.5 – 0.825) | Since calcium dihydroxide is classified as irritating to skin, dermal exposure has to be minimised as far as technically feasible. A DNEL for dermal effects has not been derived. Thus, dermal exposure is not assessed in this exposure scenario. | |
| Environmental exposure for agricultural soil protection | | | | |
| The PEC calculation for soil and surface water was based on the FOCUS soil group (FOCUS, 1996) and on the “draft guidance on the calculation of predicted environmental concentration values (PEC) of plant protection products for soil, ground water, surface water and sediment (Kloskowski et al., 1999). The FOCUS/EXPOSIT modelling tool is preferred to the EUSES as it is more appropriate for agricultural-like application as in this case where parameter as the drift needs to be included in the modelling. FOCUS is a model typically developed for biocidal applications and was further elaborated on the basis of the German EXPOSIT 1.0 model, where parameters such as drifts can be improved according to collected data: once applied on the soil, calcium dihydroxide can indeed migrate then towards surface waters, via drift. | | | | |
| Environmental emissions | See amounts used | | | |
| Exposure concentration in waste treatment (WWTP) | Not relevant for agricultural soil protection | | | |
| Exposure concentration in aquatic compartment | Substance | PEC (ug/L) | PNEC (ug/L) | RCR |
| | $\text{Ca}(\text{OH})_2$ | 7.48 | 490 | 0.015 |
| Exposure concentration in sediments | As described above, no exposure of surface water nor sediment to lime is expected. Further, in natural waters the hydroxide ions react with HCO_3^- to form water and CO_3^{2-} . CO_3^{2-} forms CaCO_3 by reacting with Ca^{2+} . The calcium carbonate precipitates and deposits on the sediment. Calcium carbonate is of low solubility and a constituent of natural soils. | | | |
| Exposure concentrations in soil and groundwater | Substance | PEC (mg/L) | PNEC (mg/L) | RCR |
| | $\text{Ca}(\text{OH})_2$ | 660 | 1080 | 0.61 |
| Exposure concentration in atmospheric compartment | This point is not relevant. Calcium dihydroxide is not volatile. The vapour pressures is below 10 ⁻⁵ Pa. | | | |
| Exposure concentration relevant for the food chain (secondary poisoning) | This point is not relevant because calcium can be considered to be omnipresent and essential in the environment. The uses covered do not significantly influence the distribution of the constituents (Ca^{2+} and OH^-) in the environment. | | | |

Version: 1.0/EN

Revision date: February 2013

Printing Date: May 2015

Environmental exposure for soil treatment in civil engineering

The soil treatment in civil engineering scenario is based on a road border scenario. At the special road border technical meeting (Ispra, September 5, 2003), EU Member States and industry agreed on a definition for a "road technosphere". The road technosphere can be defined as "the engineered environment that carries the geotechnical functions of the road in connection with its structure, operation and maintenance including the installations to ensure road safety and manage run off. This technosphere, which includes the hard and soft shoulder at the edge of the carriageway, is vertically dictated by the groundwater watertable. The road authority has responsibility for this road technosphere including road safety, road support, prevention of pollution and water management". The road technosphere was therefore excluded as assessment endpoint for risk assessment for the purpose of the existing/new substances regulations. The target zone is the zone beyond the technosphere, to which the environmental risk assessment applies.

The PEC calculation for soil was based on the FOCUS soil group (FOCUS, 1996) and on the "draft guidance on the calculation of predicted environmental concentration values (PEC) of plant protection products for soil, ground water, surface water and sediment (Kloskowski et al., 1999). The FOCUS/EXPOSIT modelling tool is preferred to the EUSES as it is more appropriate for agricultural-like application as in this case where parameter as the drift needs to be included in the modelling. FOCUS is a model typically developed for biocidal applications and was further elaborated on the basis of the German EXPOSIT 1.0 model, where parameters such as drifts can be improved according to collected data.

| | | | | |
|---|--|-------------------|--------------------|------------|
| Environmental emissions | See amounts used | | | |
| Exposure concentration in waste water treatment plant (WWTP) | Not relevant for road border scenario | | | |
| Exposure concentration in aquatic compartment | Not relevant for road border scenario | | | |
| Exposure concentration in sediments | Not relevant for road border scenario | | | |
| Exposure concentrations in soil and groundwater | Substance | PEC (mg/L) | PNEC (mg/L) | RCR |
| | $\text{Ca}(\text{OH})_2$ | 701 | 1080 | 0.65 |
| Exposure concentration in atmospheric compartment | This point is not relevant. Calcium dihydroxide is not volatile. The vapour pressures is below 10^{-5} Pa. | | | |
| Exposure concentration relevant for the food chain (secondary poisoning) | This point is not relevant because calcium can be considered to be omnipresent and essential in the environment. The uses covered do not significantly influence the distribution of the constituents (Ca^{2+} and OH^-) in the environment. | | | |

Environmental exposure for other uses

For all other uses, no quantitative environmental exposure assessment is carried because

- The operational conditions and risk management measures are less stringent than those outlined for agricultural soil protection or soil treatment in civil engineering
- Lime is an ingredient and chemically bound into a matrix. Releases are negligible and insufficient to cause a pH-shift in soil, wastewater or surface water
- Lime is specifically used to release CO_2 -free breathable air, upon reaction with CO_2 . Such applications only relates to the air compartment, where the lime properties are exploited
- Neutralisation/pH-shift is the intended use and there are no additional impacts beyond those desired.

Version: 1.0/EN

Revision date: February 2013

Printing Date: May 2015

4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

The DU works inside the boundaries set by the ES if either the proposed risk management measures as described above are met or the downstream user can demonstrate on his own that his operational conditions and implemented risk management measures are adequate. This has to be done by showing that they limit the inhalation and dermal exposure to a level below the respective DNEL (given that the processes and activities in question are covered by the PROCs listed above) as given below. If measured data are not available, the DU may make use of an appropriate scaling tool such as MEASE (www.ebrc.de/mease.html) to estimate the associated exposure. The dustiness of the substance used can be determined according to the MEASE glossary. For example, substances with a dustiness less than 2.5 % according to the Rotating Drum Method (RDM) are defined as "low dusty", substances with a dustiness less than 10 % (RDM) are defined as "medium dusty" and substances with a dustiness ≥ 10 % are defined as "high dusty".

DNEL_{inhalation}: 1 mg/m³ (as respirable dust)

Important note: The DU has to be aware of the fact that apart from the long-term DNEL given above, a DNEL for acute effects exists at a level of 4 mg/m³. By demonstrating a safe use when comparing exposure estimates with the long-term DNEL, the acute DNEL is therefore also covered (according to R.14 guidance, acute exposure levels can be derived by multiplying long-term exposure estimates by a factor of 2). When using MEASE for the derivation of exposure estimates, it is noted that the exposure duration should only be reduced to half-shift as a risk management measure (leading to an exposure reduction of 40 %).

Version: 1.0/EN

Revision date: February 2013

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ES number 9.12: Consumer use of building and construction material (DIY – do it yourself)

| Exposure Scenario Format (2) addressing uses carried out by consumers | | | | |
|---|---|-------------------------------------|---|------------------------------|
| 1. Title | | | | |
| Free short title | Consumer use of building and construction material | | | |
| Systematic title based on use descriptor | SU21, PC9a, PC9b, ERC8c, ERC8d, ERC8e, ERC8f | | | |
| Processes, tasks activities covered | Handling (mixing and filling) of powder formulations Application of liquid, pasty lime preparations. | | | |
| Assessment Method* | Human health: A qualitative assessment has been performed for oral and dermal exposure as well as exposure to the eye. Inhalation exposure to dust has been assessed by the Dutch model (van Hemmen, 1992). Environment: A qualitative justification assessment is provided. | | | |
| 2. Operational conditions and risk management measures | | | | |
| RMM | No product integrated risk management measures are in place. | | | |
| PC/ERC | Description of activity referring to article categories (AC) and environmental release categories (ERC) | | | |
| PC 9a, 9b | Mixing and loading of powder containing lime substances. Application of lime plaster, putty or slurry to the walls or ceiling. Post-application exposure. | | | |
| ERC 8c, 8d, 8e, 8f | Wide dispersive indoor use resulting in inclusion into or onto a matrix Wide dispersive outdoor use of processing aids in open systems Wide dispersive outdoor use of reactive substances in open systems Wide dispersive outdoor use resulting in inclusion into or onto a matrix | | | |
| 2.1 Control of consumers exposure | | | | |
| Product characteristic | | | | |
| Description of the preparation | Concentration of the substance in the preparation | Physical state of the preparation | Dustiness (if relevant) | Packaging design |
| Lime substance | 100 % | Solid, powder | High, medium and low, depending on the kind of lime substance (indicative value from DIY ¹ fact sheet see section 9.0.3) | Bulk in bags of up to 35 kg. |
| Plaster, Mortar | 20-40% | Solid, powder | | |
| Plaster, Mortar | 20-40% | Pasty | - | - |
| Putty, filler | 30-55% | Pasty, highly viscous, thick liquid | - | In tubes or buckets |
| Pre-mixed lime wash paint | ~30% | Solid, powder | High - low (indicative value from DIY ¹ fact sheet see section 9.0.3) | Bulk in bags of up to 35 kg. |
| Lime wash paint/milk of lime preparation | ~ 30 % | Milk of lime preparation | - | - |
| Amounts used | | | | |
| Description of the preparation | Amount used per event | | | |
| Filler, putty | 250 g – 1 kg powder (2:1 powder water) Difficult to determine, because the amount is heavily dependent on the depth and size of the holes to be filled. | | | |
| Plaster/lime wash paint | ~ 25 kg depending on the size of the room, wall to be treated. | | | |
| Floor/wall equalizer | ~ 25 kg depending on the size of the room, wall to be equalized. | | | |
| Frequency and duration of use/exposure | | | | |
| Description of task | Duration of exposure per event | | frequency of events | |
| Mixing and loading of lime containing powder. | 1.33 min (DIY ¹ -fact sheet, RIVM, Chapter 2.4.2 Mixing and loading of powders) | | 2/year (DIY ¹ fact sheet) | |
| Application of lime plaster, putty or slurry to the walls or ceiling | Several minutes - hours | | 2/year (DIY ¹ fact sheet) | |

Version: 1.0/EN

Revision date: February 2013

Printing Date: May 2015

| Human factors not influenced by risk management | | | | |
|---|--------------------|---|-----------------------------|-------------------------------|
| Description of the task | Population exposed | Breathing rate | Exposed body part | Corresponding skin area [cm²] |
| Handling of powder | Adult | 1.25 m³/hr | Half of both hands | 430 (DIY¹ fact sheet) |
| Application of liquid, pasty lime preparations. | Adult | NR | Hands and forearms | 1900 (DIY¹ fact sheet) |
| Other given operational conditions affecting consumers exposure | | | | |
| Description of the task | Indoor/outdoor | Room volume | Air exchange rate | |
| Handling of powder | indoor | 1 m³ (personal space, small area around the user) | 0.6 hr⁻¹ (unspecified room) | |
| Application of liquid, pasty lime preparations. | indoor | NR | NR | |
| Conditions and measures related to information and behavioural advice to consumers | | | | |
| In order to avoid health damage DIYers should comply with the same strict protective measures which apply to professional workplaces: | | | | |
| <ul style="list-style-type: none">• Change wet clothing, shoes and gloves immediately.• Protect uncovered areas of skin (arms, legs, face): there are various effective skin protection products which should be used in accordance with a skin protection plan (skin protection, cleansing and care). Cleanse the skin thoroughly after the work and apply a care product. | | | | |
| Conditions and measures related to personal protection and hygiene | | | | |
| In order to avoid health damage DIYers should comply with the same strict protective measures which apply to professional workplaces: | | | | |
| <ul style="list-style-type: none">• When preparing or mixing building materials, during demolition or caulking and, above all, during overhead work, wear protective goggles as well as face masks during dusty work.• Choose work gloves carefully. Leather gloves become wet and can facilitate burns. When working in a wet environment, cotton gloves with plastic covering (nitrile) are better. Wear gauntlet gloves during overhead work because they can considerably reduce the amount of humidity which permeates the working clothes. | | | | |
| 2.2 Control of environmental exposure | | | | |
| Product characteristics | | | | |
| Not relevant for exposure assessment | | | | |
| Amounts used* | | | | |
| Not relevant for exposure assessment | | | | |
| Frequency and duration of use | | | | |
| Not relevant for exposure assessment | | | | |
| Environment factors not influenced by risk management | | | | |
| Default river flow and dilution | | | | |
| Other given operational conditions affecting environmental exposure | | | | |
| Indoor | | | | |
| Direct discharge to the wastewater is avoided. | | | | |
| Conditions and measures related to municipal sewage treatment plant | | | | |
| Default size of municipal sewage system/treatment plant and sludge treatment technique | | | | |
| Conditions and measures related to external treatment of waste for disposal | | | | |
| Not relevant for exposure assessment | | | | |
| Conditions and measures related to external recovery of waste | | | | |
| Not relevant for exposure assessment | | | | |
| 3. Exposure estimation and reference to its source | | | | |
| The risk characterisation ratio (RCR) is the quotient of the refined exposure estimate and the respective DNEL (derived no-effect level) and is given in parentheses below. For inhalation exposure, the RCR is based on the acute DNEL for lime substances of 4 mg/m³ (as respirable dust) and the respective inhalation exposure estimate (as inhalable dust). Thus, the RCR includes an additional safety margin since the respirable fraction is a sub-fraction of the inhalable fraction according to EN 481. Since limes are classified as irritating to skin and eyes a qualitative assessment has been performed for dermal exposure and exposure to the eye. | | | | |

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| Human exposure | | |
|---|--|---|
| Handling of powder | | |
| Route of exposure | Exposure estimate | Method used, comments |
| Oral | - | Qualitative assessment Oral exposure does not occur as part of the intended product use. |
| Dermal | small task: $0.1 \mu\text{g}/\text{cm}^2$ (-) large task: $1 \mu\text{g}/\text{cm}^2$ (-) | Qualitative assessment If risk reduction measures are taken into account no human exposure is expected. However, dermal contact to dust from loading of lime substances or direct contact to the lime cannot be excluded if no protective gloves are worn during application. This may occasionally result in mild irritation easily avoided by prompt rinsing with water. Quantitative assessment The constant rate model of ConsExpo has been used. The contact rate to dust formed while pouring powder has been taken from the DIY ¹ -fact sheet (RIVM report 320104007). |
| Eye | Dust | Qualitative assessment If risk reduction measures are taken into account no human exposure is expected. Dust from loading of the lime substances cannot be excluded if no protective goggles are used. Prompt rinsing with water and seeking medical advice after accidental exposure is advisable. |
| Inhalation | Small task: $12 \mu\text{g}/\text{m}^3$ (0.003) Large task: $120 \mu\text{g}/\text{m}^3$ (0.03) | Quantitative assessment Dust formation while pouring the powder is addressed by using the dutch model (van Hemmen, 1992, as described in section 9.0.3.1 above). |
| Application of liquid, pasty lime preparations. | | |
| Route of exposure | Exposure estimate | Method used, comments |
| Oral | - | Qualitative assessment Oral exposure does not occur as part of the intended product use. |
| Dermal | Splashes | Qualitative assessment If risk reduction measures are taken into account no human exposure is expected. However, splashes on the skin cannot be excluded if no protective gloves are worn during the application. Splashes may occasionally result in mild irritation easily avoided by immediate rinsing of the hands with water. |
| Eye | Splashes | Qualitative assessment If appropriate goggles are worn no exposure to the eyes needs to be expected. However, splashes into the eyes cannot be excluded if no protective goggles are worn during the application of liquid or pasty lime preparations, especially during overhead work. Prompt rinsing with water and seeking medical advice after accidental exposure is advisable. |
| Inhalation | - | Qualitative assessment Not expected, as the vapour pressure of limes in water is low and generation of mists or aerosols does not take place. |
| Post-application exposure | | |
| No relevant exposure will be assumed as the aqueous lime preparation will quickly convert to calcium carbonate with carbon dioxide from the atmosphere. | | |
| Environmental exposure | | |
| Referring to the OC/RMMs related to the environment to avoid discharging lime solutions directly into municipal wastewater, the pH of the influent of a municipal wastewater treatment plant is circum-neutral and therefore, there is no exposure to the biological activity. The influent of a municipal wastewater treatment plant is often neutralized anyway and lime may even be used beneficially for pH control of acid wastewater streams that are treated in biological WWTPs. Since the pH of the influent of the municipal treatment plant is circum neutral, the pH impact is negligible on the receiving environmental compartments, such as surface water, sediment and terrestrial compartment. | | |

End of the safety data sheet