FASS

Movicol Choklad

M

Norgine

Pulver till oral lösning i dospåse
(Tillhandahålls för närvarande ej) (Pulver till oral lösning. Friflytande vitt till ljusbrunt pulver.)

Osmotiskt aktiva medel

Aktiva substanser:
Kaliumklorid
Makrogol
Natriumklorid
Natriumvätekarbonat

ATC-kod:
A06AD65

Läkemedel från Norgine omfattas av Läkemedelsförsäkringen.

Miljöpåverkan

Kaliumklorid

Miljörisk: Användning av elektrolyter bedöms inte medföra någon miljöpåverkan.

Detaljerad miljöinformation

Enligt den europeiska läkemedelsmyndigheten EMA:s riktlinjer för miljörisk-bedömningar av läkemedelssubstanser (EMA/CHMP/SWP/4447/00), är vitaminer, elektrolyter, aminosyror, peptider, proteiner, kolhydrater, lipider, vacciner och växtbaserade läkemedel undantagna då de inte bedöms medföra någon betydande risk för miljön.

Makrogol

Miljörisk: Användning av makrogol har bedömts medföra försumbar risk för miljöpåverkan.
Nedbrytning: Makrogol bryts ned i miljön.
Bioackumulering: Makrogol har låg potential att bioackumuleras.

Detaljerad miljöinformation

Detailed background information

Movicol is prescribed in sachets containing 13.125g of PEG 3350. It is used for chronic constipation at a dose of 1-3 sachets (13.125g to 39.375g) per day and at a higher dosage of up to 8 sachets (105g) per day for a maximum of three days for faecal impaction.

Environmental Risk Classification

Predicted Environmental Concentration (PEC)

PEC is calculated according tothe following formula:

PEC (µg/L) = $(A*10^9*(100-R))/(365*P*V*D*100)$

PEC (µg/L) = $(562844.9873*10^9*(100-0))/(365*9*10^6*200*10*100)$

PEC = 85.7 µg/L

Where:

A = 562844.9873 kg (total sold amount API for Macrogol in Sweden year 2015, data from IMS Health).

R = 0 % removal rate(due to loss by adsorption to sludge particles, by volatilization, hydrolysis or biodegradation) = 0 if no data is available.

P = number of inhabitants in Sweden = $9*10^6$

V (L/day) = volume of wastewater per capita and day = 200 (ECHA default) (Ref. I)

D = factor for dilution of waste water by surface water flow = 10 (ECHA default) (Ref. I)

Predicted No Effect Concentration (PNEC)

Ecotoxicological studies

Algae (Pseudokirchneriella subcapitata) (guideline OECD 201) (Ref. V)*:*

EC_{50} 72 h (endpoint - growth under non-axenic conditions). Neither the EC_{50} nor the LOEC could be calculated but they must be > 101 mg/L.

NOEC = 101 mg/L

In the absence of any adverse effect on cell growth, the NOEC for the area under the growth curve, the growth rate and yield was 101 mg/L.

Crustacean (Daphnia magna):

Chronic toxicity

NOEC 21 days (endpoint - parental mortality, growth and reproduction under semi-static exposure conditions) = 9.50 mg/L (guideline OECD 211) (Ref. VI).

HLS Report No. KRZ0007, 22 July 2011, Huntingdon Life Sciences Ltd, UK.)

Fish (Pimephales promelas):

Chronic toxicity

NOEC 28 days (endpoint - hatching success, post-hatch survival, sub-lethal effects and growth under flow-through conditions) = 9.98 mg/L (guideline OECD 210) (Ref. VII)

Other ecotoxicity data:

PNEC = 950 µg/L

The PNEC for surface water (PNECsw) is based on the lowest NOEC from the Tier II A long-term toxicity tests. A default assessment factor (AF) of 10 is applied (Technical Guidance Document on Risk Assessment)

PNECsurfacewater = NOEC/AF

= 9.50 mg/L/10 = 0.950 mg/L = 950 µg/L

Environmental risk classification (PEC/PNEC ratio)

PEC/PNEC = 85,7 µg/L/950 µg/L = 0.09, i.e.

PEC/PNEC ≤ 0.1 which justifies the phrase:

“Use of Macrogol 3350 (PEG 3350) has been considered to result in insignificant environmental risk.”

Degradation

Biotic degradation

R eady degradability:

Mixtures containing PEG 3350 were 10% of the theoretical maximum after 4 days, 60% after 7 days and 96% at the end of the test (Day 28). Substances are considered to be readily biodegradable in this test if CO_2 production is equal to or greater than 60% of the theoretical value within ten days of the level achieving 10%.

The ready biodegradability of PEG 3350 was assessed in the Sealed-Vessel CO^2 Evolution Test, OECD Procedure 301F (1992).

Conclusion:

PEG 3350 was readily biodegradable so no aquatic sediment study was required.

Justification of chosen degradation phrase:

Substance Macrogol 3350 (PEG 3350) passes the ready degradation test. The phrase “Macrogol 3350 (PEG 3350) is degraded in the environment” is thus chosen.

Bioaccumulation

Partitioning coefficient:

A study was performed to determine the octanol/water partition coefficient (Kow) of PEG 3350. This parameter was determined by HPLC with refractive index detection (according to OECD Method 107). The reference substance, acetanilide ($\log_{10}$Kow = 1.0), was analysed by HPLC with UV detection.

The retention time of PEG 3350 was found to be less than that of acetanilide. Therefore, the $\log_{10}$Kow of PEG 3350 was <1.0 (Ref.VIII).

Justification of chosen bioaccumulation phrase:

As the $\log_{10}$Kow of PEG 3350 is <4, the phrase “Macrogol 3350 (PEG 3350) has low potential for bioaccumulation” is chosen.

Excretion (metabolism)

Substance Macrogol 3350 (PEG 3350) is excreted to 100% as parent compound.

References

I. ECHA, European Chemicals Agency. 2008 Guidance on information requirements and chemical safety assessment. http://guidance.echa.europa.eu/docs/guidance_document/information_requirements_en.htm

II. Committee for Medicinal Products for Human Use (CPMP) 2006. Guideline on the Environmental Risk Assessment of Medicinal Products for Human Use EMEA/CHMP/SWP/4447/00.

III. Questions and answers on 'Guideline on the environmental risk assessment of medicinal products for human use'
EMA/CHMP/SWP/44609/2010 Rev. 1, Adopted 26 May 2016

IV. Environmental Risk Assessment (Phase I and Phase II Tier A) of PEG 3350 in Movicol, HLS study number: KRZ0010, 7 February 2012, Huntingdon Life Sciences Ltd, UK.

V. PEG 3350 Algal growth inhibition assay. HLS Report No. KRZ0008, 22 July 2011, Huntingdon Life Sciences Ltd, UK.

VI. PEG 3350 Daphnia magna reproduction toxicity test. HLS Report No. KRZ0007, 22 July 2011, Huntingdon Life Sciences Ltd, UK.

VII. PEG 3350 Fish early life stage toxicity test for fathead minnow. HLS Report No. KRZ0006, 1 November 2011, Huntingdon Life Sciences Ltd, UK.

VIII. PEG 3350 Partition coefficient and soil adsorption HLS Report No. KRZ0003, 25 March 2011, Huntingdon Life Sciences Ltd, UK.

Natriumklorid

Miljörisk: Användning av elektrolyter bedöms inte medföra någon miljöpåverkan.

Detaljerad miljöinformation

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Natriumvätekarbonat

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