Justification for the selection of a substance for CoRAP inclusion

- Update -

Substance Name (Public Name):	Isopropylnapthalene
Chemical Group:	
EC Number:	249-535-3
CAS Number:	29253-36-9
Submitted by:	Austria
Date:	17/03/2015 21/03/2017 (Updated version)

Note

This document has been prepared by the evaluating Member State given in the CoRAP update.

Contents

1 IDENTITY OF THE SUBSTANCE

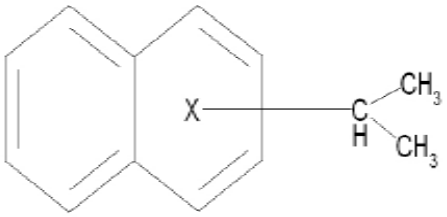
1.1 Other identifiers of the substance

Table 1: Substance identity

EC name:	Isopropylnapthalene
IUPAC name:	Isopropylnapthalene
Index number in Annex VI of the CLP Regulation	-
Molecular formula:	C13H14
Molecular weight or molecular weight range:	170.25
Synonyms/Trade names:	

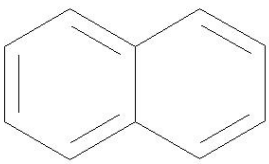
Type of substance ☐ Mono-constituent ☒ Multi-constituent ☐ UVCB

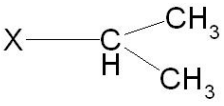
Structural formula:

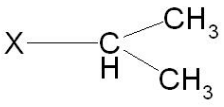


1.2 Similar substances/grouping possibilities

EC No. 254-052-6 (CoRAP, 2013)







2 CLASSIFICATION AND LABELLING

2.1 Harmonised Classification in Annex VI of the CLP

None

2.2 Self classification

In the registration
Asp. Tox 1; H304: May be fatal if swallowed and enters airways
Aquatic Acute 1; H400: Very toxic to aquatic life
Aquatic Chronic 1; H410: Very toxic to aquatic life with long lasting effects

- The following hazard classes are in addition notified among the aggregated self classifications in the C&L Inventory:

  There exists one notification – with "no classification"

2.3 Proposal for Harmonised Classification in Annex VI of the CLP

None

3 INFORMATION ON AGGREGATED TONNAGE AND USES

From ECHA dissemination site (retrieved on 01 February 2017)		
☐ 1 – 10 tpa	☒ 10 – 100 tpa	☐ 100 – 1000 tpa
☐ 1000 – 10,000 tpa	☐ 10,000 – 100,000 tpa	☐ 100,000 – 1,000,000 tpa
☐ 1,000,000 – 10,000,000 tpa	☐ 10,000,000 – 100,000,000 tpa	☐ > 100,000,000 tpa
☐ <1 . . . . . >+ tpa (e.g. 10+ ; 100+ ; 10,000+ tpa)		☐ Confidential

☒ Industrial use	☒ Professional use	☒ Consumer use	☒ Closed System

Substance is used for the manufacture of:
PC 1: Adhesives, sealants
PC 9a: Coatings and paints, thinners, paint removes
PC 9b: Fillers, putties, plasters, modelling clay
PC 18: Ink and toners
PC 32: Polymer preparations and compounds
Products are used industrially, professionally and/or by consumers.

4 OTHER COMPLETED/ONGOING REGULATORY PROCESSES THAT MAY AFFECT SUITABILITY FOR SUBSTANCE EVALUATION

☐ Compliance check, Final decision	☐ Dangerous substances Directive 67/548/EEC
☐ Testing proposal	☐ Existing Substances Regulation 793/93/EEC
☐ Annex VI (CLP)	☐ Plant Protection Products Regulation 91/414/EEC
☐ Annex XV (SVHC)	☐ Biocidal Products Directive 98/8/EEC ; Biocidal Product Regulation (Regulation (EU) 528/2012)
☐ Annex XIV (Authorisation)	☐ Other (provide further details below)
☐ Annex XVII (Restriction)	
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5 JUSTIFICATION FOR THE SELECTION OF THE CANDIDATE CoRAP SUBSTANCE

5.1 Legal basis for the proposal

☒ Article 44(2) (refined prioritisation criteria for substance evaluation)

☐ Article 45(5) (Member State priority)

5.2 Selection criteria met (why the substance qualifies for being in CoRAP)

☐ Fulfils criteria as CMR/ Suspected CMR

☐ Fulfils criteria as Sensitiser/ Suspected sensitiser

☐ Fulfils criteria as potential endocrine disrupter

☒ Fulfils criteria as PBT/vPvB / Suspected PBT/vPvB

☐ Fulfils criteria high (aggregated) tonnage (*tpa > 1000*)

☒ Fulfils exposure criteria

☒ Fulfils MS's (national) priorities

5.3 Initial grounds for concern to be clarified under Substance Evaluation

Hazard based concerns		
CMR ☐C ☐M ☐R	Suspected CMR[1] ☐C ☐M ☐R	☐ Potential endocrine disruptor
☐ Sensitiser	☐ Suspected Sensitiser[1]	
☐ PBT/vPvB	☒ Suspected PBT/vPvB[1]	☐ Other (please specify below)
Exposure/risk based concerns		
☒ Wide dispersive use	☐ Consumer use	☐ Exposure of sensitive populations
☒ Exposure of environment	☐ Exposure of workers	☐ Cumulative exposure
☐ High RCR	☐ High (aggregated) tonnage	☐ Other (please specify below)

Suspected PBT/vPvB

The registrant concluded that the substance does not fulfil the P/vB and T properties, but it is stated within the registration dossier that the substance fulfils the B properties.

Epi Suite was used by AT to estimate the water solubility, log koc, log kow, log koA, BCF and the biodegradability (BioWin3) and in addition the PBT profiler was used to estimate quickly the PBT properties (ref. to Table below).

Estimated aquatic toxicity

Ecosar was applied to estimate potential ecotoxicity. Diisopropylnathalene, a structural similar substance was used to compare the results with Isopropylnapthalene (MIPN). Diisopropylnapthalene is currently on the CoRAP for 2013 and has been evaluated by Sweden. This substance was used in a read-across approach to substitute for chronic Daphnia data not available for MIPN. For bis(isopropyl)naphthalene a chronic daphnia study exists, and here the Ecosar values are nearly the same with the experimental values, so it might be concluded that the chronic fish values are good estimates as well; fish is the most sensitive organism for MIPN, but also for Diisopropylnapthalene. A chronic fish study should be requested for both substances.

Experimental aquatic toxicity data

L(E)C50 values are available for fish, Daphnia and Algae and range between 0.15 and 0.74 mg/L; the NOEC value for algae (72hrs) is 0.079 mg/L. Long term toxicity to fish is missing! Long term NOEC value for Daphnia is not available for this substance, but a read across has been performed to diisopropylnapthalene. The NOEC value for Daphnia is 0.013 mg/L (nominal, 21 days); justification for this read across available, but the read-across substance and MIPN exhibit different water solubility. No experimental data are available for the terrestrial toxicity.

[1] CMR/Sensitiser: known carcinogenic and/or mutagenic and/or reprotoxic properties/known sensitising properties (according to CLP harmonized or registrant self-classification or CLP Inventory)
Suspected CMR/Suspected sensitiser: suspected carcinogenic and/or mutagenic and/or reprotoxic properties/suspected sensitising properties (not classified according to CLP harmonized or registrant self-classification)
Suspected PBT: Potentially Persistent, Bioaccumulative and Toxic

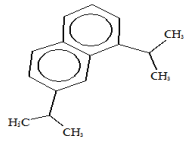
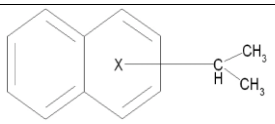
Bioaccumulation

QSAR estimated a lokow of 4.63 (by AT), in the registration is the logkow is higher with a value of 6.88, the substance screens as pot. B/vB. A BCF study according to OECD 305 is available and reveals a BCF of 2750 (NITE, 2011). It is not known if growth dilution and lipid normalisation was taken into account, therefore the BCF values might be even higher. The substance clearly fulfils the B-criterion, and is considered as pot. vB, but further in depth evaluation of the NITE study is needed. No information for the potential terrestrial bioaccumulation potential is present in the dossier.

Persistence

Diisopropylnapthalene and MIPN are predicted to be not readily biodegradable. MIPN contains no hydrolysable groups and an inherent tests (OECD 302B, 28 days) indicated a degradation of 12% (based on BOD). The substance is considered as not inherently biodegradable and according to REACH Guideline R.11 the P criterion might be considered to be fulfilled (< 20% degradation in inherent tests). No higher tier tests (simulation tests) are available. Only primary degradation has been noticed (93% TS), but no further information on metabolites is available.

The substance is therefore considered as P and pot. vP by the screening member state AT. Due to the high log koc the substance is considered as not mobile in soil and sediment. Information on metabolites is missing.

Name	**Diisopropylnathalene (bis(isopropyl)naphthalene)**	**Isopropyl-napthalene (MIPN)**
CAS no.	38640-62-9	29253-36-9
Structure		
Log koc	4.558	3.878
Water solubility (WSKOW v1.42)	0.24 est. 0.11 exp.	6.885 est.
logkow (KowWin est)	6.8	4.63
logkoA (KOAWIN v1.10)	7.365	
BCF (regression based method)	4778	523
Ready biodegradability prediction	No	No
BioWin3 (Ultimate	2.5802	2.7481

survey model)		
Chronic, daphnia (ECOSAR)	0.01 mg/L	0.094 mg/L
Chronic fish toxicity, 30 days (ECOSAR)	0.006 mg/L	0.08 mg/L
Results PBT profiler	PBT	PBT

Human and environmental exposure assessment

An human exposure assessment was not performed, as no significant toxicological hazards are considered by the registrants (no classification). It will be checked, if this approach is acceptable.
The substance is used for several uses and in several products by industrial workers, professionals and consumers. Based on the outcome of the intended evaluation of the PBT- and ecotox- assessment, it will be assessed, if the provided exposure assessments and proposed risk management measures are justified and sufficient to demonstrate safe use.

Conclusion

The substance fulfils the screening criteria for P and vP, it might even be considered to fulfil P based on only 12% degradation obtained in an inherent test (ref. to ECHA guidline R.11). Primary degradation is observed, but the identity of the metabolites remains unknown. A PBT assessment of the occurring metabolites is missing in the dossier.
Simulation tests and long-term toxicity test for fish are not available. A long-term Daphnia test is missing for MIPN, instead a 21-day NOEC value for Diisopropylnapthalene was used (= 0.013 mg/L) and revealed a value near the cut-off criterion for T. Based on the ECOSAR estimates, the most sensitive organism is fish (for MIPN and Diisoproylnapthalene), but for both substances chronic fish tests are missing. Therefore further information is necessary to conclude on the T-properties. MIPN clearly fulfils the B criterion, BCF > 2000.

Due to the missing information to complete the PBT assessment for MIPN and it´s metabolites, AT considers this substance a suitable candidate for SeV.

Human health hazard assessment

Experimental data are available for skin sensitization, AMES mutagenicity and 6 months repeated dose. Also a 24 months repeated dose study is available, but it was considered not reliable by the registrant. Other endpoints were addressed with read across to prima vista structurally closely related substances: acute toxicity, skin and eye irritation, 3 months repeated dose study, in vitro gene mutation and chromosomal aberration, in vivo micronucleus test and developmental toxicity. In summary all endpoints were addressed with the exception of fertility (1 or 2 generation study) for which waiving arguments were presented in the IUCLID file.
Additional brief review of the eCA indicates that models available in the OECD QSAR toolbox appear prima vista applicable and negative with regard to skin irritation, skin sensitization, carcinogenicity, in vitro SHE cell transformation and developmental toxicity. OECD QSAR toolbox

and VEGA QSAR platform results are overall equivocal for genotoxicity, but the OECD QSAR toolbox profiler does not indicate specific structural alerts, except for the general Cramer class 3 (high). Some of the OECD QSAR toolbox modelled human metabolites contain some structural alerts for DNA and protein binding. In summary no high concern for human health hazard is apparent from the prima vista analysis, however all the read across data and QSAR data would need careful and transparent analysis for applicability or applicability domain and model quality. There is little but no contradicting information available for the substance via the eChemPortal. The assessment factors and the DNEL derivation appears prima vista in line with the REACH guidance.

Conclusion on human health hazard:

The CSR and IUCLID could profit from a revision including in addition to the read across also QSAR data and a careful and transparent analysis of the applicability of both in silico approaches. However the information prima vista available for this substance does not indicate an especially high concern for human toxicological effects. Therefore, a deeper analysis of human toxicological effects is considered to be of low priority.

5.4 Preliminary indication of information that may need to be requested to clarify the concern

☐ Information on toxicological properties	☐ Information on physico-chemical properties
☒ Information on fate and behaviour	☒ Information on exposure
☒ Information on ecotoxicological properties	☒ Information on uses
☐ Information ED potential	☐ Other (provide further details below)
Required tests will be decided based on outcome at the end of the first year of evaluation.	

5.5 Potential follow-up and link to risk management

☐ Harmonised C&L	☐ Restriction	☐ Authorisation	☐ Other (provide further details)
Depending on the outcome of substance evaluation a harmonized classification and/or authorization might be required.			