

Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

**Sub-Committee of Experts on the Globally Harmonized
System of Classification and Labelling of Chemicals**

2 December 2014

Twenty-eighth session

Geneva, 10 – 12 (morning) December 2014

Item 4 (a) of the provisional agenda

Implementation of the GHS:

Development of a list of chemicals in accordance with the GHS

Assessing the potential development of a global list of classified chemicals

**Transmitted by the expert from the United States of America on behalf
of the informal correspondence group**

Purpose

1. The purpose of this document is to provide an update on the work undertaken by the informal correspondence group assessing the potential development of a global list of classified chemicals, and an agenda for the group's meeting at the 28th session.

Background and update

2. During the 27th Session, the classification list correspondence group agreed to the general work plan for the pilot classification, to be performed in conjunction with OECD. Under this plan, for each pilot chemical, the party that had nominated the chemical would be responsible for the preparation of the draft data assessment and classification. The draft assessment and classification would then be posted on a password-protected OECD website and opened for comment. The sponsor would revise the assessment and classification in response to comments, and an OECD working group would consider the revised draft assessment and classification. Outstanding issues could be discussed in a teleconference or face-to-face meeting. The results of the exercise, including the agreed classification, if reached, would be reported to the Sub-Committee, which may wish to adopt it or to return it with comments. Resources used in the exercise would be tracked.

3. The correspondence group held a teleconference on 18 September 2014, in which it refined the pilot classification work plan, which is attached as Annex 1. This final agreed work plan follows the same contours as that agreed at the July 2014 meeting, but clarifies several details, such as the fact that comments will be posted on the OECD website, and the form in which comments will be addressed by the sponsor.

4. The correspondence group also agreed to the following schedule for the pilot project:

- (a) Lead countries would have their draft assessments and classifications to the OECD by the beginning of June 2015.
- (b) The comment period would close by mid-September 2015.

- (c) Lead countries would respond to comments by mid-October 2015.
- (d) Initial meetings/teleconferences to discuss classifications would start in November 2015.
- (e) The OECD would have a status report for the Sub-Committee in December 2015.

5. The correspondence group also discussed the use of robust summaries in the pilot classification project. Noting that much data is published only in the form of robust studies, the group agreed that the data assessment may use robust summaries if the classifier

- (a) identifies the studies relied upon,
- (b) provides sufficient detail about each study so that its reliability can be assessed, and
- (c) obtains additional information about the study if requested by a participant in the classification exercise.

It was suggested summaries of data in the “International Uniform Chemical Information Database” (IUCLID) might be useful for classification, but care must be taken to ensure that those summaries provide enough information so that the reliability of the data can be assessed.

6. The correspondence group also agreed that the following data would be tracked about resources used:

- (a) Time reviewing data and preparing the assessment.
- (b) Time spent in classification.
- (c) Time spent in reviewing and responding to comments.
- (d) Time spent in discussions with the working group on the classifications.

7. After the 18 September teleconference, the correspondence group agreed by email exchange that the following three chemicals be selected for the pilot project:

- (a) Dimethyltin dichloride, CAS No. 753-73-1 (ECHA)
- (b) Dicyclopentadiene, CAS No. 77-73-6 (Russian Federation)
- (c) Di-n-butyl phthalate, CAS No. 84-74-2 (United States of America)

8. Minutes of the 18 September teleconference are attached as Annex 2. ECHA’s and the Russian Federation’s nomination forms are attached as Annexes 3 and 4, respectively.

Agenda

9. Interested persons are invited to attend the meeting of the correspondence group during the 28th session of the Sub-Committee. The proposed agenda is as follows:

- (a) Introductions and overview of meeting.
- (b) Overview and deadlines for the pilot classification exercise.
- (c) Update on OECD Cooperative Chemicals Assessment Meetings (CoCAM) classification exercise.
- (d) Discussion of how the pilot classification exercise reflects the guiding principles.

- (e) Report on efforts of experts to have their countries/organizations participate in the OECD working group.
 - (f) Discussion of programme of work for the upcoming biennium.
10. The following is a thought starter for the programme of work for the upcoming biennium:
- (a) Complete the classification exercise according to the agreed work plan.
 - (b) Evaluate the exercise in light of the guiding principles.
 - (c) Report back to the Sub-Committee the results of the pilot exercise and proposed next steps in assessing the potential development of a global list of chemical classifications.

Annex 1

Pilot classification workplan

Joint GHS Sub-Committee/OECD Pilot Classification Exercise

Revised Draft

17 November 2014

1. Identification of pilot chemicals by the GHS Sub-Committee
2. Formation of a working group at OECD
3. The country or entity who nominated the chemicals will compile the data or studies to be considered and prepare a draft assessment report, including a summary of the relevant studies and a draft GHS classification with justification for all hazard categories. This will be submitted to the GHS Sub-Committee, which will then forward it to OECD.
4. The assessment report and GHS classification proposal will be posted on the OECD Clearspace.
5. All interested countries and entities will be invited to submit comments on the data selected, the assessment report, and the GHS classification proposal. Countries and entities interested in participating will contact the OECD to obtain a password. The comments will be posted on the OECD Clearspace.
6. The lead country or entity will respond to comments and revise the assessment report and classification proposal when needed. The lead country or entity will also prepare a document summarizing and providing a response to the comments.
7. The revised assessment report and classification proposal will be discussed by the OECD working group to resolve any disputes. This could be done via teleconference or in a face-to-face meeting. Outcomes of the exercise, including both agreements and disagreements in the working group will be noted.
8. The lead country and working group will keep track of the resources used in the exercise, including amount of staff time and expertise needed.
9. The OECD communicates the outcome of the pilot exercise, including an assessment of the resources used, to the GHS Sub-Committee after agreement of the Task Force on Hazard Assessment.
10. The GHS Sub-Committee could accept the outcome of the report, or provide comments/questions.
11. The OECD working group could then consider the comments / questions, decide on the appropriate response, and communicate that response to the GHS Sub-Committee after agreement on the response of the Task Force on Hazard Assessment.
12. The GHS Sub-Committee would then consider any further responses from the OECD working group, and make a final determination on the outcome of the pilot project.

Annex 2

Teleconference minutes (18 September 2014)

1. The teleconference began at 6:30 am Washington DC time. Experts from the United States of America, CEFIC, IPIECA, OECD, Finland, EU, ECHA, Russian Federation, Canada, ACI, AISE, ACA, the Netherlands, Sweden, and the United Kingdom were on the line. The meeting was chaired by the expert from the United States of America.

2. We first considered the draft pilot exercise plan dated 16 September 2014 (see Attachment A). There was general agreement with the approach outlined, and the chair indicated that Switzerland previously indicated its support for the approach. There were several suggestions for refinements of the plan:

- (a) In paragraph 6, it was suggested that in addition to revising the assessment report and the classification proposal, the lead country would also prepare a document summarizing the comments and providing a response to them.
- (b) It was clarified that in paragraph 7, the OECD will merely report the outcome of the classification exercise, rather than adopt a proposed classification. This report will note both areas where agreement was reached, as well as those where agreement could not be reached.
- (c) There was a discussion about who would participate in the classification exercise. Countries or entities that wished to submit comments would be able to contact the OECD coordinator for a password to the website where the draft assessment and classifications were posted, and they would be able to submit comments. They are all invited to participate in the OECD working group discussions. The final report would be agreed on by OECD working group members.
- (d) The expert for the OECD stressed the importance, for the success of the exercise, that a sufficient number of members participate in the working group. The chair reported that the US and Switzerland have indicated that they would participate in the OECD working group. The expert from the OECD indicated that he had preliminary indications of interest from other countries. It was agreed that everyone would contact their affiliation's representative in the OECD to encourage and provide support for participation in the working group.

3. The Russian Federation reported on the activities of the APEC Chemical Dialogue (CD). The CD discussed the pilot exercise at its 20 August 2014 meeting and there was interest in participating in the activity. Members were asked to reflect on criteria for selecting a chemical for the classification exercise, although no chemicals have been yet nominated by the CD virtual working group.

4. We discussed the chemicals to be selected for the pilot classification exercise.

- (a) ECHA stated that though it had considered Tallow Alkyl Amines, the data may lead to unnecessary complicated discussions related to substance identity and read-across and may therefore not be a representative or appropriate candidate for the task. It was in the process of identifying another candidate, which would take a few weeks.
- (b) The Russian Federation indicated its interest in taking the lead for dicyclopentadiene, CAS No. 77-73-6, and stated that it will provide a nomination form for the chemical.

- (c) The United States of America indicated its interest in being the lead country for Di-n-butyl phthalate (DNBP).
 - (d) The OECD commented that when considering the chemicals to select, we should make sure that we are getting the most information that we can. We should consider doing at least one classification from scratch—that is, select one for which no assessment has been performed. The United States of America indicated that it will be doing its chemical from scratch even though there is an OECD assessment.
 - (e) It was agreed to revisit chemical selection in another teleconference later this fall after experts had an opportunity to consider the chemicals proposed by ECHA and the Russian Federation.
5. The following timeframe for the exercise was agreed to:
- (a) Lead countries would have their draft assessments and classifications to the OECD by the beginning of June 2015.
 - (b) The comment period would close by mid-September 2015.
 - (c) Lead countries would respond to comments by mid-October 2015.
 - (d) Initial meetings/teleconferences to discuss classifications would start in November 2015.
 - (e) The OECD would have a status report for the Sub-Committee in December 2015.
6. The proposed approach for the use of data for the pilot exercise was discussed (see Attachment B). It was noted that if it could only rely on published reports of data, the universe of substances that could be addressed in a global list was substantially narrowed. The group agreed that the data assessment may use unpublished studies if: the classifier (i) identifies the studies relied upon, (ii) provides sufficient detail about each study so that its reliability can be assessed, and (iii) obtains additional information about the study if requested by a participant in the classification exercise. It was suggested summaries of data in IUCLID might be useful for classification, but care must be taken to ensure that those summaries provide enough information so that the reliability of the data can be assessed. It was also important that the classification take account of more recent data that might not be included in the IUCLID database.
7. It was suggested that we have uniform categories to track resources used. It was agreed that it was better to use broad categories, and the following were agreed to:
- (a) Time reviewing data and preparing the assessment
 - (b) Time spent in classification
 - (c) Time spent in reviewing and responding to comments
 - (d) Time spent in discussions with the working group on the classifications
8. Another teleconference will be held in late October or early November to finalize chemical selection.

Annex 2, Attachment A

Joint GHS Sub-Committee/OECD Pilot Classification Exercise Draft September 16, 2014

1. Identification of pilot chemicals by the GHS Sub-Committee
2. Formation of a working group at OECD
3. The country or entity who nominated the chemicals will compile the data or studies to be considered and prepare a draft assessment report, including a summary of the relevant studies and a draft GHS classification with justification for all hazard categories. This will be submitted to the GHS Sub-Committee, which will then forward it to OECD.
4. OECD will post the assessment report and GHS classification proposal will be posted on the OECD Clearspace.
5. All interested countries and entities will be invited to submit comments on the data selected, the assessment report, and the GHS classification proposal. The comments will be posted on the OECD Clearspace.
6. The lead country or entity will respond to comments and revise the assessment report and classification proposal when needed.
7. The revised assessment report and classification proposal will be discussed by the OECD working group to resolves any disputes, and adopts a recommended classification when possible. This could be done via teleconference or in a face-to-face meeting.
8. The lead country and working group will keep track of the resources used in the exercise, including amount of staff time and expertise needed.
9. The OECD communicates the outcome of the pilot exercise, including an assessment of the resources used, to the GHS Sub-Committee after agreement of the Task Force on Hazard Assessment.
10. The GHS Sub-Committee could accept the outcome of the report, or provide comments questions.
11. The OECD working group could then consider the comments/questions, decide on the appropriate response, and communicate that response to the GHS Sub-Committee after agreement of the Task Force on Hazard Assessment.

Annex 2, Attachment B

Joint GHS Sub-Committee/OECD Pilot Classification Exercise
Issue: Availability of Data Requirements for Classification Exercise

1. The Guiding Principles for the development of a global list state that:
“the data sets forming the basis for the chemical classification must be referenced with the classification. The source of the information must also be electronically available, and publically accessible.”
(See report of the GHS Sub-Committee of Experts on its 24th session, document ST/SG/AC.10/C.4/48, Annex III.)
2. This criterion arose from concerns that little is known about the data on which some classifications in existing lists were made, and reflects a desire for transparency in the classifications that make up the global list.
3. A question has arisen about how to apply this principle when using data that does not come from published studies. This is a particular issue in Europe, where under REACH consortia have developed data that members use in hazard classifications but that are not published publically. It also might be an issue for industry in the future, if they want to propose a global classification for a chemical using data that are proprietary.
4. The OECD and the European Union, when preparing data assessments and hazard classifications, must:
 - (i) identify the studies relied upon,
 - (ii) provide sufficient detail about each study so that its reliability can be assessed, and
 - (iii) obtain additional information about the study if requested by a participant in the classification exercise.
5. It is proposed that the pilot classification exercise take the same approach in using data, and as long these three criteria are met, classifications may rely on data that are not from published studies. This approach will ensure that the most relevant, good quality data are used in the classification, reflect the current practices and realities about data availability, and will serve the purpose of transparency motivating the data availability requirements of the guiding principles.

Annex 3

Nomination from ECHA

Dimethyltin dichloride (DMTC)	
Chemical name	Dimethyltin dichloride (DMTC)
Identifier	EC-number: 212-039-2
UN	
CAS	753-73-1
Impurities	
HPV (Y/N)	
Pesticide (Y/N)	No
Data availability: Data Rich/Data Poor	Data rich
Is this chemical already on a list (Y/N)	Yes
List 1 (list name and date of classification)	EU CLP Regulation, Annex VI, Index number : 050-029-00-8
Is the data and rationale for each classification available (Y/N)	List 1 classification(s)
	Repr. 2 (development) Acute Tox. 2 (inhal.) Acute Tox. 3 (oral) Acute Tox. 3 (dermal) STOT RE 1 (nervous system, immune system) Skin Corr. 1B
Reason for selecting chemical	Suggested as a representative example substance, for which there are data available for many hazard classes and differentiations. Additional info: Registered in the tonnage band of 10-100 tonnes per year in the EU; 81 notifications (by manufacturers/importers) in the EU Inventory; e.g. used as a heat stabilizer in PVC and in glass coatings.

Annex 4

Nomination from the Russian Federation

3a,4,7,7a-tetrahydro-4,7-methanoindene (Dicyclopentadiene)	
Chemical name	3a,4,7,7a-tetrahydro-4,7-methanoindene (Dicyclopentadiene)
Identifier	RTECS #: PC1050000 EC #: 201-052-9 Annex 1 Index: 601-044-00-9
UN	2048
CAS	77-73-6
Impurities	
HPV (Y/N)	Yes
Pesticide (Y/N)	No, but used in the process of manufacture of Pesticide;
Data availability: Data Rich/Data Poor	Data rich
Is this chemical already on a list (Y/N)	Yes,
List 1 (list name and date of classification)	Annex VI of Regulation (EC) No 1272/2008 (CLP Regulation)
Is the data and rationale for each classification available (Y/N)	List 1 classification(s) Yes
List 1 Physical hazards	Flam. Liquid 2 H225: Highly flammable liquid and vapour.
List 1 Health hazards	Acute Tox. 4 H302: Harmful if swallowed. Acute Tox. 4 H330: Harmful if inhaled. Skin Irrit. 2: H315 Causes skin irritation Eye Irrit. 2: H319 Causes serious eye irritation STOT SE 3: H335 May cause respiratory irritation

3a,4,7,7a-tetrahydro-4,7-methanoindene (Dicyclopentadiene)	
List 1 Environ. hazards	Aquatic Chronic 2: H411 Toxic to aquatic life with long lasting effects.
List 2 (list name and date of classification)	Japan NITE Classification result
Is the data and rationale for each classification available (Y/N)	List 2 classification(s) Yes
List 2 Physical hazards	Flammable liquids - Category 3 (industrial products) - Flammable liquid and vapour Flammable solids - Category 1. - Flammable solid Rational for the classification: Flash point: 32degC
List 2 Health hazards	Acute toxicity (oral) Category 4 - Harmful if swallowed Rational for the classification: The statistical calculation of 5 data (ECETOC JACC 19 (1991)) distributed from 346.5 to 590 mg/kg as rat oral LD50 was done and the mean value of 373.6mg/kg was obtained. So it was set as Category 4. Acute toxicity (dermal) Category 5 - May be harmful in contact with skin Rational for the classification: Although three data (ECETOC JACC 19 (1991)) distributed 4380 - 6600 mg/kg was found out as rabbit dermal LD50, it was set as "Category 5" from the lowest data of 4380mg/kg. Acute toxicity (inhalation: vapour) Category 2 - Fatal if inhaled Rational for the classification: Since the mean of 422ppm (2.28mg/L) was obtained with the statistical work of the four data for rat inhalation LC50 distributed 372 - 660ppm (ECETOC JACC 19 (1991)), it was classified as Category 2. Skin irritation Category 2 - Causes skin irritation Rational for the classification: It was classified as "Category 2" since it was Moderate in the application test on rabbit skin (ECETOC JACC 19 (1991)). Eye irritation Category 2B - Causes eye irritation Rational for the classification: The result of the dose experiment to the eyes of a rabbit was mild (ECETOC JACC 19 (1991)). But R36 is applied in EU. Since SIDS (1998) was also set to irritant to eyes, it was set as "Category 2B." Specific target organs/systemic toxicity following single exposure - Category 1 (respiratory, liver, kidneys); Category 3 (narcotic effects) - Cause damage to organs (respiratory, liver, kidneys); May cause respiratory irritation or may cause drowsiness and dizziness (narcotic effects). Rational for the classification: There are the effects on the respiratory systems, kidney, liver and paralysis of the extremities are reported by rat inhalation exposure equivalent to the guidance value of Category 1. And anesthesia conditions is regarded by oral treatment to mink (DFGOT vol.6 (1993)). So it is classified into "Category 1 (the respiratory system, liver, kidney), Category 3 (anesthetic actions)". Specific target organs/systemic toxicity following repeated exposure - Category 1 (kidneys); Category 2 (circulatory system, liver, lung) - Causes damage to organs (kidneys)

3a,4,7,7a-tetrahydro-4,7-methanoindene (Dicyclopentadiene)	
	<p>through prolonged or repeated exposure; May cause damage to organs (circulatory system, liver, lung) through prolonged or repeated exposure</p> <p>Rational for the classification: In rat inhalation exposure test, the influence on the kidney within the guidance value of Category 1 is reported (ECETOC JACC 19 (1991)), and the influence on lungs is further reported within the guidance value of Category 2 (ACGIH (2001)). Moreover, in the rat oral administration within the guidance value of Category 2, since the influence to the circulatory organ and liver (Ministry of Health and Welfare reports (2006)) was observed, it was classified into "Category 1 (kidney), Category 2 (cardiovascular, liver, lung)."</p> <p>Aspiration hazard Category 1 - May be fatal if swallowed and enters airways</p> <p>Rational for the classification: Although it is a polycyclic hydrocarbon corresponded by dynamic viscosity, the industrial products contain monocyclic substance (cyclopentadiene) a lot. We classified it as "Category 1."</p>
List 2 Environ. hazards	<p>Hazardous to the aquatic environment (acute) Category 2 - Toxic to aquatic life</p> <p>Rational for the classification: It was classified into Category 2 from 96-hour LC50=4.3mg/L of fishes (<i>Oryzias latipes</i>) (SIDS, 2002).</p> <p>Hazardous to the aquatic environment (chronic) Category 2 - Toxic to aquatic life with long lasting effects</p> <p>Rational for the classification: Classified into Category 2, since acute toxicity was Category 2 and not rapidly degrading (BOD: 0% (existing chemical safety inspections data)), though less bio-accumulative (BCF=384 (existing chemical safety inspections data)).</p>
List 3 (list name and date of classification)	HSNO CCID – New Zealand
Is the data and rationale for each classification available (Y/N)	List 3 classification(s)
List 3 Physical hazards	<p>Flammable Liquids: medium hazard: 3.1C</p> <p>Flashpoint Value :32 °C</p> <p>Test Method :Open Cup</p> <p>Boiling Point :170 °C</p>
List 3 Health hazards	<p>Acutely toxic (oral): 6.1C</p> <p>SPECIES: Mouse</p> <p>ENDPOINT: LD50</p> <p>VALUE: 190 mg/kg</p> <p>REFERENCE SOURCE:Proceedings of the International Congress on Toxicology, Toxicology as a Predictive Science, 1st, Toronto, 1977, Plaa, G.L., and W.A. Duncan, eds., New York, Academic Press, Inc., 1978 (-,448,1978). [RTECS]</p> <p>Acutely toxic (inhalation): 6.1C</p>

3a,4,7,7a-tetrahydro-4,7-methanoindene (Dicyclopentadiene)

Inhalation Form:dust/mist

SPECIES: Mouse

ENDPOINT: LC50

VALUE: 145 ppm 4hr (= 0.78 mg/l)

INHALATION FORM:

REFERENCE SOURCE: Dow Benelux N. V. Terneuzen

(13) Kinkead, E.R. et al. (1971): Toxicol. Appl. Pharmacol. 20, 552-561.(IUCLID 2000)

REMARK: 145 ppm = 145/1000 x 132.22/24.45 = 0.78 mg/L

Acutely toxic (dermal) 6.1E

SPECIES: Rabbit

ENDPOINT: LD50

VALUE: 4380 mg/kg

REFERENCE SOURCE: Dow Benelux N. V. Terneuzen

(25) Smyth et al. (1962):Am. Ind. Hyg. Ass. J., 23, 95-107. (IUCLID 2000)

Irritating to the skin 6.3A

SPECIES: Rabbit

RESULT: Moderately irritating

REFERENCE SOURCE: Dow Benelux N. V. Terneuzen

Test substance: 75 %iges DCPD (28) Jones, J.R. (1989): Dow Europe Report 1228. (IUCLID 2000)

R-PHRASE: R 36/37/38 Irritating to eyes, respiratory system and skin. [IUCLID 2000]

Irritating to the eye 6.4A

SPECIES: Rabbit

RESULT: Irritating

REFERENCE SOURCE: Dicyclopentadien : Anonymous : TA:Toxikologische Bewertung. Heidelberg, Berufsgenossenschaft der chemischen Industrie PG:31 p YR:1994 IP: VI:84 [TOXLINE]

Harmful to human target organs or systems (oral) 6.9B

EndPoint:

Primary Organ: Hepatotoxicity (liver)

Signs of toxicity observed include ataxia, reduced movement, exhaustion, tremors and spasms. Repeated administration of 64 mg dicyclopentadiene/kg body weight/day in the diet for 14 days is tolerated by dogs without overt signs of toxicity. In weasels, 754 mg/kg body weight/day administered in the diet for 21 days caused changes to haematological parameters and a marked loss in body fat. On administration of 40 or 200 mg dicyclopentadiene/kg body weight/day to rats by gavage for 28 days, body weight gain was inhibited and changes in liver, kidney, adrenal gland and thymus weights were seen, as well as histological effects on the liver and adrenal glands. The no observed effect level was given as 8 mg/kg body weight/day. These findings are contrary to the results of subchronic feeding studies in rats and mice, in which no effects occurred at doses of up to 198 and 88 mg/kg body weight, respectively. Inhalation of dicyclopentadiene vapour 10 times (7 hours/day) can be lethal in rats at concentrations of 250 ppm (equivalent to 1350 mg/m³) and above and in mice at 72 ppm (equivalent to 389 mg/m³) and above. Bleeding in the lungs, gut and thymus have been observed macroscopically in rats.

No effects were detected after administration of dicyclopentadiene in the diet for 90 days up to the highest tested doses of 198 mg/kg body weight/day in rats and 88 mg/kg body weight/day in mice. Inhalation of dicyclopentadiene vapour for 13 weeks caused histological effects on the kidneys (alpha₂-globulin nephropathy) in male rats at a concentration of 5.1

3a,4,7,7a-tetrahydro-4,7-methanoindene (Dicyclopentadiene)	
	<p>ppm (equivalent to 27.5 mg/m³) and above. The alpha-globulin nephropathy is specific to male rats and is not relevant to risk assessment in man. In dogs, no histopathological effects have been established up to concentrations of 32.4 ppm (equivalent to 175 mg/m³), although minor changes in clinical chemistry parameters were evident. No effect levels of 1 ppm for the rat and between 8.9 and 23.5 ppm for the dog were given.</p> <p>Dicyclopentadien : Anonymous : TA:Toxikologische Bewertung. Heidelberg, Berufsgenossenschaft der chemischen Industrie PG:31 p YR:1994 IP: VI:84 [TOXLINE]</p> <p>Harmful to human target organs or systems (inhalation) 6.9B</p> <p>EndPoint:</p> <p>Primary Organ:</p> <p>Inhalation of dicyclopentadiene vapour 10 times (7 hours/day) can be lethal in rats at concentrations of 250 ppm (equivalent to 1350 mg/m³) and above and in mice at 72 ppm (equivalent to 389 mg/m³) and above. Bleeding in the lungs, gut and thymus have been observed macroscopically in rats.</p> <p>No effects were detected after administration of dicyclopentadiene in the diet for 90 days up to the highest tested doses of 198 mg/kg body weight/day in rats and 88 mg/kg body weight/day in mice. Inhalation of dicyclopentadiene vapour for 13 weeks caused histological effects on the kidneys (alpha₂-globulin nephropathy) in male rats at a concentration of 5.1 ppm (equivalent to 27.5 mg/m³) and above. The alpha-globulin nephropathy is specific to male rats and is not relevant to risk assessment in man. In dogs, no histopathological effects have been established up to concentrations of 32.4 ppm (equivalent to 175 mg/m³), although minor changes in clinical chemistry parameters were evident. No effect levels of 1 ppm for the rat and between 8.9 and 23.5 ppm for the dog were given.</p> <p>Dicyclopentadien : Anonymous : TA:Toxikologische Bewertung. Heidelberg, Berufsgenossenschaft der chemischen Industrie PG:31 p YR:1994 IP: VI:84 [TOXLINE]</p>
List 3 Environ. Hazards	<p>Very ecotoxic in the aquatic environment 9.1B (crustacean)</p> <p>SPECIES: Daphnia pulex, Water flea</p> <p>TYPE OF EXPOSURE:</p> <p>DURATION: 2 days (48 hr)</p> <p>ENDPOINT: EC50</p> <p>VALUE: 4.200mg/L</p> <p>REFERENCE SOURCE: Ref No: 18461. Passino-Reader,D.R., J.P.Hickey, and L.M.Ogilvie (1997) Toxicity to Daphnia pulex and QSAR Predictions for Polycyclic Hydrocarbons Representative for Great Lakes Contaminants. Bull. Environ. Contam. Toxicol. 59(5):834-840. [ECOTOX]</p> <p>Biocumulative: No</p> <p>Lepomis macrochirus, Bluegill ACC conc = 980ug/L BCF = 53</p> <p>Freshwater, Test duration = 14 D, Flowthrough,</p> <p>Reference Number: 5965</p> <p>Author(s): Bentley, R.E., G.A. LeBlanc, T.A. Hollister, and B.H. Sleight Iii</p> <p>Publication Year: 1976</p> <p>Title: Acute Toxicity of Diisopropylmethyl Phosphonate and Dicyclopentadiene to Aquatic Organisms</p> <p>Reference Source: Contract No.DAMD-17-75-C-5073 Final Report, U.S.Army Medical Res.Develop.Command, Washington, D.C. :98</p>

3a,4,7,7a-tetrahydro-4,7-methanoindene (Dicyclopentadiene)

[ECOTOX] -

Rapidly Degradable: No

The results of biodegradation studies suggest dicyclopentadiene is poorly degraded in soil and water, with estimated half-lives of 1-2 years and 4-7 years respectively. The rate of photolysis in water is slow. In the event of release into top soil or water, concentrations will decrease largely as a result of volatilisation into the atmosphere; the rate of degradation of dicyclopentadiene in air is rapid, the estimated half-life being one day.

Dicyclopentadiene : ECETOC working group : TA:ECETOC Joint Assessment of Commodity Chemicals PG:47 p YR:1991 IP: VI:19

[TOXLINE]

Harmful in the aquatic environment (fish) 9.1C

SPECIES: Anabaena flos-aquae (blue-green algae)

TYPE OF EXPOSURE:

DURATION: 96 hr

ENDPOINT: LC50

VALUE: 22 mg/l

REFERENCE SOURCE: ECETOC working group: TA:ECETOC Joint Assessment of Commodity Chemicals PG:47 p YR:1991 IP: VI:19 [TOXLINE]

Biocumulative: No

Lepomis macrochirus, Bluegill ACC conc = 980ug/L BCF = 53

Freshwater, Test duration = 14 D, Flowthrough,

Reference Number: 5965

Author(s): Bentley, R.E., G.A. LeBlanc, T.A. Hollister, and B.H. Sleight Iii

Publication Year: 1976

Title: Acute Toxicity of Diisopropylmethyl Phosphonate and Dicyclopentadiene to Aquatic Organisms

Reference Source: Contract No.DAMD-17-75-C-5073 Final Report, U.S.Army Medical Res.Develop.Command, Washington, D.C. :98

[ECOTOX] -

Rapidly Degradable: No

The results of biodegradation studies suggest dicyclopentadiene is poorly degraded in soil and water, with estimated half-lives of 1-2 years and 4-7 years respectively. The rate of photolysis in water is slow. In the event of release into top soil or water, concentrations will decrease largely as a result of volatilisation into the atmosphere; the rate of degradation of dicyclopentadiene in air is rapid, the estimated half-life being one day.

Dicyclopentadiene : ECETOC working group : TA:ECETOC Joint Assessment of Commodity Chemicals PG:47 p YR:1991 IP: VI:19

[TOXLINE]

Ecotoxic to terrestrial vertebrates 9.3B

SPECIES: Mouse

ENDPOINT: LD50

VALUE: 190 mg/kg

3a,4,7,7a-tetrahydro-4,7-methanoindene (Dicyclopentadiene)	
	REFERENCE SOURCE: Proceedings of the International Congress on Toxicology, Toxicology as a Predictive Science, 1st, Toronto, 1977, Plaa, G.L., and W.A. Duncan, eds., New York, Academic Press, Inc., 1978 (-,448,1978). [RTECS]
Reason for selecting chemical	There is data available Interest of industry
