

6/1/2010

Review: NIOSH Skin Notations Review - Group A

Profile Number: 08

Profile Title: Dinitrobenzene (DNB); m-Dinitrobenzene (m-DNB); o-Dinitrobenzene (o-DNB); p-Dinitrobenzene (p-DNB)

Summary

Both reviewers generally agreed that the document clearly outlines the systemic health hazards, direct health hazards, and immune-mediated responses associated with exposures of the skin to dinitrobenzene and its three closely-related isomers: m-dinitrobenzene, o-dinitrobenzene and p-dinitrobenzene. Reviewer 1 had reservations about the statement that, for SI=0.12, "skin absorption may significantly contribute to the overall body burden." He questions the use of a 0.1 criteria as the discrete dividing line between significant and insignificant absorption.

Recommendations

- Explain "... despite the use of personal protective equipment" – what type of ppe was worn? (Q1, Reviewer 1)
- For SI=0.12, is it correct to say, "...indicates that skin absorption may significantly contribute to the overall body burden"? The 0.1 criteria can't be some fine dividing line between significant/insignificant absorption. (Q1, Reviewer 1)

Suggested additional scientific data to review:

- Merck quote dermal LD50 in rabbit = 130 mg/kg (http://www.merck-chemicals.co.uk/1-chloro-2-4-dinitrobenzene/MDA_CHEM-820291/p_XZ2b.s1LhgAAAAEWeeEfVhTI?CountryName=United+Kingdom) (Q1, Reviewer 1)
- Older data in <http://www.atsdr.cdc.gov/toxprofiles/tp74.pdf> (Q1, Reviewer 1)
- GHS classification in Europe... Acute Tox. 1 H310 (Q12, Reviewer 1)

Verbatim Reviewer Comments

1. Does this document clearly outline the systemic health hazards associated with exposures of the skin to the chemical? If not, what specific information is missing from the document?

Reviewer 1:

Yes, with some comments below.

Explain "...despite the use of personal protective equipment." – what type of ppe was worn?

If the SI = 0.12 is it really correct to say, "...indicates that skin absorption may significantly contribute to the overall body burden"? the 0.1 criteria can't be some fine dividing line between significant/insignificant absorption.

Merck quote dermal LD50 in rabbit = 130 mg/kg (http://www.merck-chemicals.co.uk/1-chloro-2-4-dinitrobenzene/MDA_CHEM-820291/p_XZ2b.s1LhgAAAAEWeeEfVhTI?CountryName=United+Kingdom)

Older data in <http://www.atsdr.cdc.gov/toxprofiles/tp74.pdf>

Reviewer 2:

This document clearly outlines the systemic health hazards associated with exposures of the skin to ditrobenzene and its three closely related isomers m-dinitrobenzene, o-dinitrobenzene and p-dinitrobenzene.

2. If the SYS or SYS (FATAL) notations are assigned, is the rationale and logic behind the assignment clear? If not assigned, is the logic clear why it was not (e.g., insufficient data, no identified health hazard)?

Reviewer 1:

Yes, agree with the designation SK: SYS

Reviewer 2:

This document assigned SYS notation for dinitrobenzene. The rationale and logic behind this notation is clearly outlined in the document.

3. Does this document clearly outline the direct (localized) health hazards associated with exposures of the skin to the chemical? If not, what specific information is missing from the document?

Reviewer 1:

Yes, agree that the data do not support assignment of any direct effect category.

Reviewer 2:

This document clearly outlines the direct health hazards associated with exposures of the skin to all four dinitrobenzenes.

4. If the DIR, DIR (IRR), or DIR (COR) notations are assigned, is the rationale and logic behind the assignment clear? If not assigned, is the logic clear why it was not (e.g., insufficient data, no identified health hazard)?

Reviewer 1:

N/A

Reviewer 2:

DIR, DIR (IRR), or DIR (COR) notations are not assigned to. It is clarified that this lack of assignment is based on insufficient data available. The rationale and the logic is clear in the document.

5. Does this document clearly outline the immune-mediated responses (allergic response) health hazards associated with exposures of the skin to the chemical? If not, what specific information is missing from the document?

Reviewer 1:

Yes

Reviewer 2:

This document clearly outlined immune-mediated responses health hazards associated with exposures of the skin to dinitrobenzene. Based on insufficient information available SEN notation to dinitrobenzene is not assigned. No specific information was found to be missing.

6. If the SEN notation is assigned, is the rationale and logic behind the assignment clear? If not assigned, is the logic clear why it was not (e.g., insufficient data, no identified health hazard)?

Reviewer 1:

N/A

Reviewer 2:

SEN notation was not assigned and the logic and rationale is clear.

7. If the ID^(SK) or SK were assigned, is the rationale and logic outlined within the document?

Reviewer 1:

N/A

Reviewer 2:

This is not assigned.

8. Are the conclusions supported by the data?

Reviewer 1:

Yes

Reviewer 2:

The conclusions are supported by the data.

9. Are the tables clear and appropriate?

Reviewer 1:

Yes

Reviewer 2:

Tables are appropriate and clear.

10. Is the document organized appropriately? If not, what improvements are needed?

Reviewer 1:

Yes

Reviewer 2:

The document is organized appropriately.

11. Is the language of the manuscript acceptable as written? If not, what improvements are needed?

Reviewer 1:

Yes

Reviewer 2:

The language of the manuscript as written is acceptable.

12. Are you aware of any scientific data reported in governmental publications, databases, peer reviewed journals, or other sources that should be included within this document?

Reviewer 1:

GHS classification in Europe...

Acute Tox. 1 H310

Reviewer 2:

I am unaware of any pertinent information missing.

13. What is your final recommendation for this manuscript? (Do you agree with the scientific rationale that serves as a basis for the skin notation assignments?)

Reviewer 1:

These are fine.

Reviewer 2:

The final recommendation is that this document be accepted as presented.