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**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  
Transport of Dangerous Goods**  
(Twentieth session, 3-12 December 2001,  
agenda item 7 (d))

**LISTING AND CLASSIFICATION**

**Miscellaneous amendment proposals**

**New entry for the persalt sodium carbonate peroxyhydrate  
in Division 5.1**

**Submitted by the expert from Germany**

**Background**

1. At present the detergent raw material Sodium Carbonate Peroxyhydrate is shipped worldwide in quantities of approx. 180,000 MT/y with increasing tendency.
2. At present the shipping of this material is carried out in bags (plastics film and paper), bulk bags, (flexible IBCs), bulk packagings (non-pressurized boxtype freight containers with sift-proof inner liner), hopper type trucks and tank trucks.
3. Since February 1998 the majority of the quantity (including domestic shipments in the United States of America) shipped worldwide is nowadays classified as an oxidizer pursuant to the transport regulations (division 5.1, UN 1479, PG II and III) based on positive results given by the UN O.1 test (see Annex 1).



**Annex 1**

INFRACOR  
Degussa-Hüls gruppe

Hanau, February 05, 2001

**Report SPZ 92/97-1 (n)****UN Testing with Sodium Percarbonate**

- 1 Test for oxidizing solids** (according to UN Manual of Tests and Criteria, ST/SG/AC.10/11/Rev.3, 1999, 34.4.1, Test O.1)

**1.1 Samples**

The test was conducted with four different samples in two series (which means with two reference test series). The test samples and the reference samples were prepared according to the test procedures as prescribed in section 34.4.1 of the UN test manual.

**1.2 Results**

The following table shows the test results with the relation to the reference test results (mean burning time of five trials):

<b>Ratio of Mixture</b>	<b>4:1</b>	<b>1:1</b>	<b>Ref.</b>
Sample	Burning time [s]	Burning time [s]	No
Sodium Percarbonate (sample 1)	62.4	n.t.	1
Sodium Percarbonate (sample 2)	32.4	n.t.	1
Sodium Percarbonate (sample 3)	29.0	114.6	2
Sodium Percarbonate (sample 4)	27.8	108.2	2

<b>Ratio of Mixture</b>	<b>No</b>	<b>6:4</b>	<b>4:6</b>	<b>3:7</b>
Reference Sample		Burning time [s]	Burning time [s]	Burning time [s]
Potassium Bromate : Cellulose	1	6.8	26.2	89.4
Potassium Bromate : Cellulose	2	n.t.	26.4	84.0

n.t. = not tested

**1.3 Conclusion**

The product sodium percarbonate, represented by the tested samples, should be classified in Packing Group III of Division 5.1.

Dr. W. Wildner

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- 2.7 Physical state at 20 °C (2.2.1.2<sup>\*/</sup>) .....~~solid/liquid/gas~~<sup>\*\*</sup>
- 2.8 Appearance at normal carriage temperatures, including colour and odour :  
**Crystalline, white, free flowing granules, odourless**
- 2.9 Other relevant physical properties:  
**Risk of decomposition when exposed to permanent heat (exothermic decomposition <sup>3</sup> 60 °C).**

**Section 3. FLAMMABILITY**

- 3.1 Flammable vapour
- 3.1.1 Flash point (2.3.3<sup>\*/</sup>) **n.a.** °C **oc/cc**
- 3.1.2 Is combustion sustained? (2.3.1.2<sup>\*/</sup>) .....**yes/no**
- 3.2 Autoignition temperature **n.a.** °C
- 3.3 Flammability range (LEL/UEL) **n.a.** %
- 3.4 Is the substance a flammable solid? (2.4.2 <sup>\*/</sup>) **yes/no**
- 3.4.1 If yes, give details .....

**Section 4. CHEMICAL PROPERTIES**

- 4.1 Does the substance require inhibition/stabilization or other treatment such as nitrogen blanket to prevent hazardous reactivity ? **yes/no**  
If yes, state
- 4.1.1 Inhibitor/stabilizer used:.....
- 4.1.2 Alternative method:.....
- 4.1.3 Time effective at 55 °C:.....
- 4.1.4 Conditions rendering in ineffective:.....
- 4.2 Is the substance an explosive according to paragraph 2.1.1.1? (2.1 <sup>\*/</sup>) **yes/no**
- 4.2.1 If yes, give details:.....
- 4.3 Is the substance a desensitized explosive? (2.4.2.4 <sup>\*/</sup>) **yes/no**
- 4.3.1 If yes, give details:.....

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<sup>\*/</sup> This and similar references are to chapters and paragraphs in the Model Regulations on the Transport of Dangerous Goods.

<sup>\*\*/</sup> See definition of "liquid" in 1.2.1 of the Model Regulations on the Transport of Dangerous Goods.



**Section 5. HARMFUL BIOLOGICAL EFFECTS**

- 5.1 LD 50, oral (2.6.2.1.1 \*/) **1034 mg/kg** Animal species: **Rat, male and female (lit.)**
- 5.2 LD 50, dermal (2.6.2.1.2 \*/) **> 2000 mg/kg** Animal species: **Rabbit, OECD 402 (lit.)**
- 5.3 LC 50, inhalation (2.6.2.1.3 \*/) **not available** mg/L Exposure time : **1** hours  
or **not applicable** ml/m<sup>3</sup> Animal species : **Rat**
- 5.4 Saturated vapour concentration at 20 °C (2.6.2.2.4.3 \*/) **not applicable**
- 5.5 Skin exposure (2.8 \*/) results: **Slightly irritant** Exposure time: ..... hours/minutes  
Animal species: **Rabbit (OECD 404)**
- 5.6 Other data:  
**Not sensitizing, Buehler test, guinea pig (OECD 406) (lit.)**
- 5.7 Human experience:  
**Irritating to eyes and skin. Harmful if swallowed. In case product dust is released, irritating to respiratory system.**

**Section 6. SUPPLEMENTARY INFORMATION**

- 6.1 Recommended emergency action
- 6.1.1 Fire (include suitable and unsuitable extinguishing agents):  
**Product itself is not combustible. Contact with combustible substances may cause ignition. Involved in a fire or exposed to high temperatures, it may decompose yielding oxygen and steam. Risk of overpressure and bursting due to decomposition in confined spaces. Suitable extinguishing media: Water, quenching foam and powder; Unsuitable extinguishing media: Carbon dioxide, organic compounds.**
- 6.1.2: Spillage:  
**Keep away from heat. Protect from moisture. Absorb mechanically. Avoid production of dust. Keep containers open; do not seal hermetically. Never return spilled product into its original container for re-use (Risk of decomposition).**
- 6.2 Is it proposed to transport the substance in :
- 6.2.1 Intermediate Bulk Containers (6.5\*/) ? ..... **yes/☐**
- 6.2.2 Multimodal tanks (6.7\*/) ? ..... **yes/☐**
- 6.2.3 Box type container with liner..... **yes/☐**
- If yes, give details in Sections 7 and/or 8.

**Section 7. INTERMEDIATE BULK CONTAINERS (IBCs) (only complete if yes in 6.2.1)**

- 7.1 Proposed type(s): **All types listed in packing instruction IBC08 (exempted 13H1)**  
**Metal IBCs shall be provided with a device to allow venting during transport.**

**Section 8. MULTIMODAL TANK TRANSPORT (only complete if yes in 6.2.2)**

- 8.1 Description of proposed tank (including IMO tank type if known) ..... **T1**
- 8.2 Minimum test pressure ..... **1,5 bar**
- 8.3 Minimum shell thickness ..... **5 mm**
- 8.4 Details of bottom openings, if any..... **2 shut-off devices**
- 8.5 Pressure relief arrangements ..... **Normal type**

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\*/ This and similar references are to chapters and paragraphs in the Model Regulations on the Transport of Dangerous Goods.