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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

Thirty-third session  
Geneva, 30 June-9 July (a.m.) 2008  
Item 4 of the provisional agenda

LISTING, CLASSIFICATION AND PACKING

New entry for Iodine, raw in Class 8

Submitted by the expert from Germany\*

**Introduction**

1. At present the substance Iodine, raw is shipped worldwide in big quantities with increasing tendency.
2. During controls in Germany it was detected that this substance was classified by the shippers in different ways:
  - As non dangerous good,
  - Under Class 9, UN 3077, PG III, Marine Pollutant,
  - Under Class 8, UN 1759, PG II or III,

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\* In accordance with the programme of work of the Sub-Committee for 2007-2008 approved by the Committee at its third session (refer to ST/SG/AC.10/C.3/60 para. 100 and ST/SG/AC.10/C.3/34, para. 14)

- Under Class 8, with subsidiary risk 6.1, UN 2923, PG II and
- Under Division 6.1 with subsidiary risk 8, UN 3290, PG II, Marine Pollutant.

3. For safety reasons, dangerous goods globally shipped in such large quantities should be assigned to individual UN numbers, because on the one hand this promotes a unique safety standard in multimodal transportation all over the world and on the other hand only individual UN entries allow the assigning of specific packing provisions, specific operational stowage instructions, specific treatment and faster identification and access to safety information for emergency intervening in cases of emergency.

For these reasons, the expert from Germany proposes the introduction of a new entry as mentioned below (see data sheet in the annex).

### Proposal

4. (a) Add a new entry 3xxx in the Dangerous Goods List as follows:

UN No.	Name and description	Class or division	Subsidiary risk	UN packing group	Special provisions	Limited and excepted quantities		Packagings and IBCs		Portable tanks and bulk containers	
						(7a)	(7b)	Packing instruction	Special provisions	Instruction	Special provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
3xxx	IODINE, RAW	8	6.1	II	-	1 kg	E2	P002 IBC08	B2, B4	T3	TP 33

- (b) Add an entry for Iodine, raw in the alphabetical index to read :

IODINE, RAW

8

3xxx

\* \* \*

**Figure 1**

**DATA SHEET TO BE SUBMITTED TO THE UNITED NATIONS  
FOR NEW OR AMENDED CLASSIFICATION OF SUBSTANCES**

Submitted by.....GERMANY                      Date .....

Supply all relevant information including sources of basic classification data. Data should relate to the product in the form to be transported. State test methods. Answer all questions - if necessary state "not known" or "not applicable" - If data is not available in the form requested, provide what is available with details. Delete inappropriate words.

**Section 1. SUBSTANCE IDENTITY**

- 1.1      Chemical name                      **Iodine, raw**
- 1.2      Chemical formula                      **I<sub>2</sub>**
- 1.3      Other names/synonyms
- 1.4.1    UN number    **3XXX**.....1.4.2    CAS number    **7553-56-2**
- 1.5      Proposed classification for the Recommendations
- 1.5.1    Proper shipping name (3.1.2<sup>1</sup>) **IODINE, RAW**.....
- 1.5.2    Class/division **8**..... subsidiary risk(s) **6.1** .....  
    packing group **II** .....
- 1.5.3    Proposed special provisions, if any .....
- 1.5.4    Proposed packing instruction(s) .....

**Section 2. PHYSICAL PROPERTIES**

- 2.1      Melting point or range .....**114** °C
- 2.2      Boiling point or range .....**184** °C
- 2.3      Relative density at :
- 2.3.1.....15 °C
- 2.3.2.....20 °C                      **4,94**
- 2.3.3.....50 °C
- 2.4      Vapour pressure at :
- 2.4.1.....50 °C                      **0,287** kPa
- 2.4.2.....65 °C                      kPa

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<sup>1</sup> This and similar references are to chapters and paragraphs in the Model Regulations on the Transport of Dangerous Goods.

- 2.5 Viscosity at 20 °C<sup>1</sup> **n.a.** m<sup>2</sup>/s
- 2.6 Solubility in water at 20 °C .....**0,03** g/100 ml
- 2.7 Physical state at 20°C (2.2.1.1<sup>1</sup>) **solid**<sup>2</sup>
- 2.8 Appearance at normal transport temperatures, including colour and odour  
**bluish-black crystals; metallic luster, pungent odor**

.....

- 2.9 Other relevant physical properties

.....

.....

**Section 3. FLAMMABILITY**

- 3.1 Flammable vapour
  - 3.1.1 Flash point (2.3.3<sup>1</sup>) **n.a.** °C oc/cc
  - 3.1.2 Is combustion sustained? (2.3.1.3<sup>1</sup>) **no**
- 3.2 Autoignition temperature .... °C
- 3.3 Flammability range (LEL/UEL) .....**n.a.** %
- 3.4 Is the substance a flammable solid? (2.4.2<sup>1</sup>) **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 ? **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 it ineffective .....

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<sup>1</sup> This and similar references are to chapters and paragraphs in the Model Regulations on the Transport of Dangerous Goods.

<sup>2</sup> See definition of "liquid" in 1.2.1 of the Model Regulations on the Transport of Dangerous Goods.

- 4.2 Is the substance an explosive according to paragraph 2.1.1.1? (2.1<sup>1</sup>) **no**  
4.2.1 If yes, give details.....  
.....  
.....  
.....
- 4.3 Is the substance a desensitized explosive? (2.4.2.4<sup>1</sup>) **no**  
4.3.1 If yes, give details.....  
.....  
.....
- 4.4 Is the substance a self-reactive substance? (2.4.1<sup>1</sup>) **no**  
If yes, state:  
4.4.1 Exit box of flow chart.....  
What is the self-accelerating decomposition temperature (SADT) for a 50 kg package? .....°C  
Is the temperature control required? (2.4.2.3.4<sup>1</sup>) yes/no  
4.4.2 Proposed control temperature for a 50 kg package ..... °C  
4.4.3 Proposed emergency temperature for a 50 kg package .. °C
- 4.5 Is the substance pyrophoric? (2.4.3<sup>1</sup>) **no**  
4.5.1 If yes, give details.....  
.....  
.....
- 4.6 Is the substance liable to self-heating? (2.4.3<sup>1</sup>) **no**  
4.6.1 If yes, give details.....  
.....  
.....

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<sup>1</sup> This and similar references are to chapters and paragraphs in the Model Regulations on the Transport of Dangerous Goods.

- 4.7 Is the substance an organic peroxide (2.5.1<sup>1</sup>) **no**  
If yes state:
- 4.7.1 Exit box of flow chart.....  
What is the self accelerating decomposition temperature (SADT) for a 50 kg package? .....°C  
Is temperature control required? (2.5.3.4.1<sup>1</sup>) yes/no
- 4.7.2 Proposed control temperature for a 50 kg package..... °C
- 4.7.3 Proposed emergency temperature for a 50 kg package... °C
- 4.8 Does the substance in contact with water emit flammable gases? (2.4.4<sup>1</sup>) **no**
- 4.8.1 If yes, give details .....
- .....
- .....
- .....
- 4.9 Does the substance have oxidizing properties (2.5.1<sup>1</sup>) **no**
- 4.9.1 If yes, give details .....
- .....
- .....
- .....
- 4.10 Corrosivity (2.8<sup>1</sup>) to:
- 4.10.1 .....mild steel mm/year at °C
- 4.10.2 .....aluminium mm/year at °C
- 4.10.3 .....other packaging materials (specify)
- mm/year at °C
- mm/year at °C
- 4.11 Other relevant chemical properties .....
- .....
- .....
- .....

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<sup>1</sup> This and similar references are to chapters and paragraphs in the Model Regulations on the Transport of Dangerous Goods

**Section 5. HARMFUL BIOLOGICAL EFFECTS**

5.1	LD <sub>50</sub> , oral (2.6.2.1.1 <sup>1</sup> ).....	<b>1840</b> mg/kg	Animal species <b>rat</b> .....
	LD <sub>LO</sub> , oral (2.6.2.1.1 <sup>1</sup> ).....	<b>800</b> mg/kg	Animal species <b>dog</b> .....
5.2	LD <sub>50</sub> , dermal (2.6.2.1.2 <sup>1</sup> ).....	mg/kg	Animal species <b>no animal data available</b> ....
5.3	LC <sub>L0</sub> , inhalation (2.6.2.1.3 <sup>1</sup> ) .....	<b>0.8</b> mg/litre	Animal species <b>rat</b> Exposure time .... <b>1</b> hours or ..... ml/m <sup>3</sup> . Animal species .....
5.4	Saturated vapour concentration at 20 °C (2.6.2.2.4.3 <sup>1</sup> )		ml/m <sup>3</sup>
5.5	Skin exposure (2.8 <sup>1</sup> ) results	Exposure time	hours/minutes
		Animal species	<b>no animal data available</b>
5.6	Other data		

**Octanol/water partition coefficient as log Pow: 2.49**

**Fish, LC50: 0.44 mg/kg**

5.7 Human experience

**Several incidences of accidental poisoning have been reported after oral, dermal or inhalative exposure. The observed acute toxic effects of iodine are mainly due to its irritating and corrosive effects on the gastrointestinal and respiratory tract, skin, and eyes. Locally, iodine affects cells in a way similar to that of a corrosive acid. After ingestion or inhalation of iodine, oedema of the glottis or pulmonary oedema have been reported. Skin contact may give rise to skin eruption. Iodine vapour causes irritation and lachrymation in human eyes.**

**Section 6. SUPPLEMENTARY INFORMATION**

6.1 Recommended emergency action

6.1.1 Fire (include suitable and unsuitable extinguishing agents)

**Toxic gases and vapors may be released if involved in a fire. Wear full protective clothing and self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool.**

<sup>1</sup> *This and similar references are to chapters and paragraphs in the Model Regulations on the Transport of Dangerous Goods.*

6.1.2 Spillage

**Notify safety personnel of iodine spill or leaks. Ventilate area of leak or spill. Wear protective equipment (supplied air, full-facepiece respirator, airtight hood, or full-facepiece self-contained breathing apparatus; impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact; chemical safety goggles and/or a full face shield where splashing is possible). Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Collect and containerize as much solid iodine as possible. Cover the spill area with an excess of reducing agent (sodium thiosulfate, bisulfate, or ferrous salts in 3M sulfuric acid) and then neutralize with soda ash. Collect slurry into approved containers.**

6.2 Is it proposed to transport the substance in:

6.2.1 Bulk Containers (6.8<sup>1</sup>) **yes/no**

6.2.2 Intermediate Bulk Containers (6.5<sup>1</sup>)? **yes/æ**

6.2.3 Portable tanks (6.7<sup>1</sup>)? **yes/æ**

If yes, give details in Sections 7, 8 and/or 9.

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

7.1 Proposed type(s)

**Section 8. INTERMEDIATE BULK CONTAINERS (IBCs) (only complete if yes in 6.2.2)**

8.1 Proposed type(s) **All types listed in packing instruction IBC08**

**Section 9. MULTIMODAL TANK TRANSPORT (only complete if yes in 6.2.3)**

9.1 Description of proposed tank (including IMO tank type if known) **T3**

9.2 Minimum test pressure **2,65 bar**

9.3 Minimum shell thickness **5 mm**

9.4 Details of bottom openings, if any **2 shut-off devices**

9.5 Pressure relief arrangements **Normal type**

9.6 Degree of filling .....

9.7 Unsuitable construction materials **polyethylene, polyvinyl chloride, natural and synthetic rubber** .....

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