



WORKING PAPER

**DANGEROUS GOODS PANEL (DGP)
MEETING OF THE WORKING GROUP OF THE WHOLE**

Memphis, 30 April to 4 May 2007

- Agenda Item 2: Development of recommendations for amendments to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) for incorporation in the 2009/2010 Edition**
- 2.3: Part 3 — Dangerous Goods List and Limited Quantities Exceptions**
- 2.4: Part 4 — Packing Instructions**

XENON LAMPS

(Presented by Tsukasa Yoshizawa)

SUMMARY

This paper proposes Xenon lamps and the like are not subject to the Technical instructions as an exception as long as these articles are packed in combination packaging which is capable of meeting the requirements of UN packaging performance tests; drop test of Packing Group I and the stacking test.

Action by the DGP-WG is in paragraph 2.

1. INTRODUCTION

1.1 At WG-06 meeting in Beijing, we introduced Xenon Lamps, DGP-WG/06-WP/26, which are one of High Intensity Discharge Lamps with high pressure using inert gas and are generally used for copiers, facsimiles, computer output machines, stroboscopes, photographing strobe lights, high-speed photos, microscopes, automobiles, flash light signals, marine-light signals, emergency lights, measurement of environmental pollution, medical treatment, large and high-quality projectors, spectrophotometers, endoscopes, image processing like solar simulators, planetarium, etc. as a result of technical innovation since the invention of Xenon Lamps in 1944.

1.2 In Japan Xenon Lamps have been manufactured continuously up to now by Ushio Inc., for 50 years since 1957. Worldwide, there is another manufacturer called “Osram” in Germany who has been sharing the world market with Ushio Inc. Recently we found this sort of products might have to be treated as dangerous goods due to the fact that the pressure of this non-flammable gas is fairly over 280 kPa. But we found neither appropriate Proper Shipping Name nor other provision applied to these Xenon Lamps. It is requested to address this matter and establish a guideline of how to handle these articles.

1.3 In the meantime since April 2006, these articles have been treated as dangerous goods with classification of UN 3363 **Dangerous Goods in Apparatus**, Class 9, Miscellaneous.

1.4 The Report of The Meeting of the Working Group of the Whole in Beijing (WG/06) says at Item No. 4.15, “ Classification was sought as to which UN number and packing instruction number should be assigned to lamps containing xenon with a pressure greater than 280kPa. One member indicated that information from industry suggested that different gases could be present in similar lamps and that a more general entry would be preferable to that proposed in the paper. Another suggested these lamps should be considered for classification as **Receptacles, small, containing gas** if an amendment to the 50mL exception was made. It was noted that krypton was the only inert gas with A 69 against it. It was suggested if A 69 were to be against all inert gases, the problem would be simplified.”

1.5 We conducted the combination packagings performance tests for 6 type packages of fibreboard box containing xenon lamps; 1.8m drop test for PG I, 3m stacking test for 24 hours, and compulsory destruction test. And all these tests showed satisfactory as per the attached sheet of “Xenon Lamp Packing Specifications and Package Test Result” and sample photo- sheets of “No.1 Type Package Drop Test” and “No.1 Type Package Compulsory Destruction Test”.

2. ACTION BY THE DGP-WG

2.1 The DGP-WG is invited to discuss the following proposal based on the past achievement of 49 years with no irregularity or incidents so far as air transport is concerned and above test result of Packing Group I level.

2.2 Proposal

2.2.1 The following is to be added to Special Provision A98. This entry may be applied to the articles containing inert gas and/or other compressed gas, with no toxic, intended to function as electric discharge lamps, which are not subject to these Instructions, provided;

- a) these are packed in combination packagings which have the same capacity as packages to meet the requirements of UN Specification Packagings performance.
- b) each article is the product of the capacity (litres) and charge pressure (MPa) does not exceed 1.5.
- c) these are packed so as not to affect any property outside the package itself.
- d) the package must completely contain the lamp fragments in the event of rupture.

2.3 The following Appendices are attached to this WP:

- Appendix A: Xenon Lamp Packing Spec. & Package Test Result;
Appendix B: No 1. Type Package Drop Test; and
Appendix C: No 1. Type Package Compulsory Destruction Test

APPENDIX A

XENON LAMP PACKING SPECIFICATIONS AND PACKAGE TEST RESULT

2007/3/14
USHIO INC.

キセノンランプ梱包仕様・包装試験結果一覧表 (Xenon Lamp Packing Spec.& Package Test Result)

No	外装仕様書 (Outer Package Spec.)		写真(Photo)	内装仕様書 (Inner Package Spec.)		被検ランプ名 (Packed Lamp Model)	落下試験 (Drop Test)	積み重ね (Stacking Test)	強制破壊 試験 (Compulsory Destruction Test)
	外装仕様書 型式(Type of Packaging)	外装仕様書(Outer Package Spec.) 仕様書・図面		内装仕様書 型式(Type of Package)	内装仕様書(Inner Package Spec.) 主要部品図面・型式(Individual Part Diagram/Type)				
1	中大型梱包2 (Medium Large Type)	KG-XM-0133 F/B:W 620x620x830 ウレタン 側面(Side)70x100x190 12pcs 上面(Upper)60x200x200 4pcs 底面(Lower)60x200x200 4pcs (Net wt:4.6kg, Gross wt:14.2kg)		ダン箱H: XX タイプ(F ibreboard box H:XX)	個装箱(Individual Box): 680x190x190H -31-101 保護カバー(Protective Cover): Polycarbonate 51.3-30155 ウレタン(Urethan): UGIB- 31-112	UXL- 6000HD ,etc.	0.8m:OK 1.2m:OK 1.8m:OK	3mの積み重ね 24時間:変形 なし(Stacking 3m for 24 hrs: No deformation)	保護ケース内に巻片を 入れ、1.8mから落下させ 細面を回落させ 細面:内面のみ、外 面の外には影響なし (No effect with the inner package)
2	中大型梱包1 (Medium Large Type 1)	KG-XM-0071 F/B:W 460x425x580 ウレタン 側面(Side)70x100x190 12pcs 上面(Upper)60x200x200 2.5pcs 底面(Lower)60x200x200 2.5pcs (Net wt:4.5kg, Gross wt:10.8kg)		XC-S-002 ナットタイプ (Nut Type)	個装箱(Individual Box): XE-M-02 保護カバー(Protective Cover): 5L3-30155	UXL-2003HKL-O, etc.	0.8m:OK 1.2m:OK 1.8m:OK	3mの積み重ね 4時間:変形なし(Stacking 3m for 24 hrs: No deformation)	保護ケース内に巻片を 入れ、1.8mから落下させ 細面を回落させ 細面:内面のみ、外 面の外には影響なし (No effect with the inner package)
3	XL-小-1 (XL-Small-1)	KG-XM-0079 F/B:W 350x280x295 ウレタン(Urethan): 側面(Side)45x100x180 2pcs 上面(Upper)45x100x180 2pcs 底面(Lower)45x100x180 2pcs 上面(Upper)45x100x180 1pc. (Net wt:0.75kg, Gross wt:2.6kg)		小型XL Type7 (Small Type XL-Type 7)	個装箱(Individual Box): XL-10 保護カバー(Protective Cover): XC-10 スチロール(Styrene) polyethylene:XL-1077ド	UXL-S150WA, etc.	1.8m:OK	3mの積み重ね 4時間:変形なし(Stacking 3m for 24 hrs: No deformation)	3mの高さから落 下させたが破損 なし (3m of drop test: No damage)
4	XL-小-2 (XL-Small-2)	KG-XM-0079F/B:W 350x280x295 ウレタン(Urethan): 側面(Side)45x100x180 2pcs 上面(Upper)45x100x180 2pcs 底面(Lower)45x100x180 2pcs 上面(Upper)45x100x180 1pc (Net wt:0.75kg, Gross wt:2.0kg)		小型XL 緑線Type1 (Small Type XL Green Box Type 1)	個装箱(Individual Box): XL-緑(green) XL-1 H-3-39 スチロール(Styrene): UL- 1,2,3	UXL-150D>O, etc.	1.8m:OK	3mの積み重ね 24時間:変形 なし(Stacking 3m for 24 hrs: No deformation)	3mの高さから落 下させたが破損 なし (3m of drop test: No damage)
5	SH-小 (SH-Small)	KG-XM- 0161F/B:W 490x440x360 ウレタン(Urethan): 側面(Side)70x100x190 4pcs 底面 (Lower)70x100x190 4pcs (Net wt:3.9kg, Gross wt:5.0kg)		フラスコ Type6 (Plastic Case Type 6)	個装箱(Individual Case): スチレン-ホコカバ ー(Styrene Protective Cover) ウレタン(Urethan): クレタ(ure than) USH-102D	UXL-S76XE, etc.	1.8m:OK	3mの積み重ね 24時間:変形 なし(Stacking 3m for 24 hrs: No deformation)	3mの高さから落 下させたが破損 なし (3m of drop test: No damage)
6	セラキセ包装 1 (Cera-Xe Package 1)	KG-XM-0061F/B: 285x285x320 緩衝材(Cushioning material):発泡スチロール(Styrened am)、ウレタン(Urethan) 等を隙間に詰める(etc. to be stuffed in the empty space) (Net wt:3.9kg, Gross wt:5.0kg)		セラキセ包装 1 (Cera-Xe Package 1)	中箱仕様(Inter mediate Package) KG-BC-0013 F/B:W:270 x230x225 ウレタン:6個	ミラー内蔵型セラフ ランプ (Mirror Built- in Type Xenon lamp) UXR-300BU, etc.	1.8m:OK	3mの積み重ね 24時間:変形 なし(Stacking 3m for 24 hrs: No deformation)	3mの高さから落 下させたが破損 なし (3m of drop test: No damage)

APPENDIX B

NO. 1 TYPE PACKAGE 落下試験 (DROP TEST)



(Inside of package --- Before the Test)
内外装梱包状態 落下試験前



(Outside of Package---Before the Test)
外装梱包状態 落下試験前



(Outside of Package---After the Test)
外装梱包状態 落下試験後



(Inside of Package---After the Test)
内外装梱包状態 落下試験後



(Inside of Inner Package--- After the Test)
内装梱包状態 落下試験後



(Inside of Inner Package---After the Test (2))
内装梱包状態 落下試験後(2)

APPENDIX C

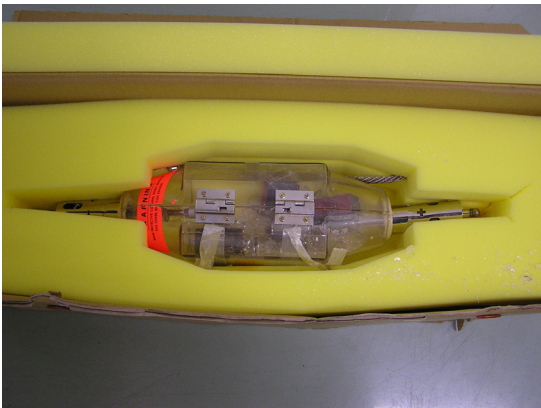
NO. 1 TYPE PACKAGE 強制破壊試験(COMPULSORY DESTRUCTION TEST)



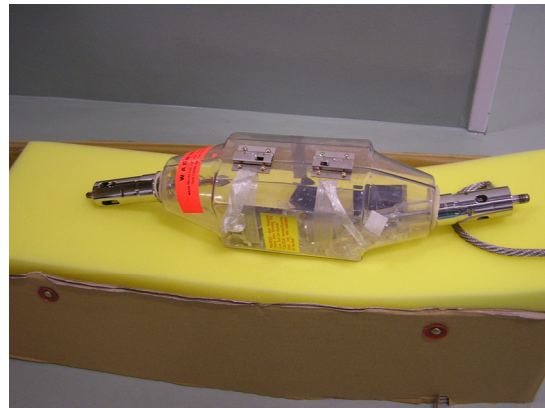
外装梱包状態 強制破壊試験後
After the Test---Outside of Package



内外装梱包状態 強制破壊試験後
After the Test---Inside of package



内装梱包状態ランプ 強制破壊試験後
After the Test---Inside of Inner Package



内装梱包状態ランプ 強制破壊試験後(2)
After the Test---Inside of Inner package (2)

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