



## DANGEROUS GOODS PANEL (DGP)

### TWENTY-FIFTH MEETING

Montréal, 19 to 30 October 2015

**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 2017-2018 Edition**

### INCIDENT WITH “CATECHOLBORANE”

(Presented by T. Muller)

#### SUMMARY

On request of the concerned industry this paper wants to inform the ICAO Dangerous Panel of an incident which happened recently with the product Catecholborane.

**Action by the DGP:** The DGP is invited to consider the recommendations in paragraph 2.

## 1. INTRODUCTION

1.1 Shippers of the product “Catecholborane” would like to inform the Dangerous Panel about an incident which recently occurred.

**Product:** Catecholborane 98%, CAS 274-07-7 (synonym 1, 3, 2-Benzodioxaborole)

**Product properties:** Corrosive, flammable (flashpoint 2°C and boiling point 50°C) Decomposes to borane gas at a rate of 2% per week at room temperature (as per manufacturer’s stability tests).

- Borane gas can ignite when in contact with moist air
- Catecholborane may react violently with water

**Transport classification:** UN 2924 — Flammable liquid, corrosive, n.o.s. Packing Group II. Product is allowed for transport on both passenger aircraft and cargo aircraft only.

## 1.2 Events

- 9/07/2015 Product dispatched from supplier in China. 36 bottles, packed in 1lt glass schott bottles, combination of 4 bottles per box with Styrofoam & vermiculite
- 18/07/2015 Product shipped on CAO from China to Belgium after a delay of 9 days due to the Typhoon Chan-Hom. Temperature constantly +33°C
- 27/07/2015 Product arrived at consignee's premises. 4 broken bottles were observed. Conclusion it was believed at that moment that bottles were broken due to missing Styrofoam bottom



- 27/07/2015 A few bottles were sampled and all caps were tightened because they were loose.
- 28/07/2015 Product was stored at 8°C
- 10/08/2015 Product was picked for customer and prepared for shipment.  
Several bottles exploded at that moment & caught fire

## 1.3 Cause of the incident

1.3.1 Moist air could enter the bottles during the (long) transit time with high temperatures causing a chemical reaction and pressure build up.

1.3.2 It can also not be excluded that several bottles arrived broken at the consignee's premises due to overpressure.

## 1.4 Recommendations from the industry

1.4.1 Forbid the transport of Catecholborane by air. Exception could be made if transported in pressure receptacles and under cooled conditions.

## 2. ACTION BY THE DGP

2.1 The DGP is invited to discuss the incident and take the appropriate actions if deemed necessary.