

# AIGA 2008 MEETING

## Product Vehicle Safety & Accident Prevention



Asia Industrial  
Gases Association



FMM MIGMA

Co-organiser:

FMM Malaysian Industrial Gases Manufacturers Group

# Safety Management for Transportation

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# Transportation Safety Management Program

- Transportation Safety Management is a series of programs that, when implemented, reduce risks that result from the operation of vehicles, and the delivery of dangerous goods and other supplies.

# Management Process



# Transportation Risk

- **Transportation risks result from several causes including:**
  - **Equipment selection, inspection & maintenance**
  - **Procedures, safe practices, emergency response**
  - **Physical and health hazards from dangerous goods or other substances, if released**
  - **Driver fitness, attitude, qualification & training**

# Reducing Equipment Risks

- **Equipment , inspection & maintenance**
  - **Vehicles**
    - **Weight limits**
    - **Suitability for intended tasks**
    - **Inspection, maintenance, repair procedures**
  - **Receptacles**
    - **Suitability for intended tasks**
    - **Inspection, maintenance, repair procedures**

# Reducing Risks From Procedures

- **Procedures, safe practices, emergency response**
  - **Safe driving**
  - **Handling dangerous goods of dangerous goods**
  - **Monitoring performance and compliance**
  - **Emergency response**

# Reducing Risks From Dangerous Goods

- **Physical and health hazards from dangerous goods or other substances, if released**
  - Capacity of container
  - Compatibility of receptacle with products
  - Strength/puncture-resistance of container
  - Closure of container
    - Valve/closure protection
    - Double seals for highly toxic materials
  - Filling ratio



# Reducing Risks From Drivers

- **Driver**
  - **Fitness for duty**
    - **Managing working hours**
    - **Driver fatigue**
  - **Attitude**
  - **Training & qualification**

# Summary of Management Programs

- **Equipment**
  - Specify, verify suitability, inspect, maintain and repair
- **Drivers**
  - Standards for physical requirements
  - Monitor for fatigue, substance abuse
  - Monitor driver attitude
  - Provide training
  - Verify compliance with regulatory and company policy requirements

# Summary of Management Programs

- **Procedures**
  - Specify, verify adequacy, enforce following procedures
- **Dangerous Goods hazards**
  - Compliance with regulations and company policy
  - Receptacles are appropriate for conditions
  - Inspection, maintenance, repair procedures exist to ensure continued serviceability
  - Filling procedures address characteristics of dangerous goods

# Evaluate Program Effectiveness

- **Monitor safety event statistics**
  - **Vehicle accidents**
  - **Product releases**
  - **Injuries**
- **Driver performance**
  - **Measures of performance**
    - **Observations**
  - **Monitor for fatigue-related events**
- **Causal analysis of safety events**

# Questions ?