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# WELCOME TO SOUTH AFRICA's 2nd

# NATIONAL DANGEROUS GOODS AWARENESS DAY

10 October 2025

# SA National Dangerous Goods Awareness Day

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## What are Dangerous Goods & why should we be aware them?

- Dangerous Goods are chemicals and articles that have the potential to cause harm to people, property and the environment !
- Regulators, Industry and the public need to be aware of what these are and how to handle them safely.
- South Africa is a major producer of minerals and chemicals ± 20% GDP, all have to be transported and a high % are exported by sea
- Dangerous Goods are regulated to protect workers and the public, property, and the environment.
- All involved in Mining, petroleum and Industrial chemicals production, as well as manufacturers of fertilizers, pesticides, cleaning and personal products should be aware of, understand and comply with the applicable regulations to improve safety, reduce incidents and accidents.
- The public also need to be aware and understand any hazards of consumer products they may use + any stay away from any accidents in a public space!

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International - **What Dangerous Goods are Regulated & when did this start?**

ALL chemicals and articles assigned a UN number are Classified as Dangerous Goods and regulated for Packaging, handling and Multi-modal Transport.

- 1940's - global demands for trade in bulk chemicals grew hugely to satisfy the need for massive reconstruction following the 2nd World War,
- A group of International Technical Experts compiled a system to Classify chemicals into 9 Classes based on the physical properties e.g. solid, liquid or gas AND the potential for causing harm – ex plosive, flammable, corrosive, toxic etc + assign a UN Number in numerical sequence with a Proper Shipping Name - PSN for use by all 4 Transport Modes, Road, Rail, Maritime & Air
- 1945: 50 countries signed and ratified the United Nations Charter,
- UN ECOSOC – Economic and Social Council created the ***UN Committee of Experts for Transport of Dangerous Goods*** to further develop these
- 1956 ECOSOC published the 1st Recommendations for Transport of Dangerous Goods
- Packaging, marking and labelling regulations were added to the Classification, UN numbers & PSN in the DGL – Dangerous Goods List
- The challenges of new Technologies, and response to global accidents and incidents was met by this Committee with regular meetings and 2yearly revisions

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## South Africa – Regulation of Dangerous Goods

- 1988-9 IMO declared that ALL Shippers shall comply with IMDG Regulations by 1 Jan 1990
- 1988 A small Industry group approached SA DOT legal Branch to adopt the UN Model Regulations to assist them comply for export shipping
- 1989 DOT agreed to do this through National DG Standards referenced into law so that they could keep pace with the UN 2 yearly revisions
- 1995 SABS 0228 Classification was published with the UN Dangerous Goods List
- 1996 SABS 0229 Packaging was published followed by others
- 1996 SA DOT joined the UN Committee of Experts as an Observer Country
- 1999 SA DOT became a full Member of the UN Committee of Experts for TDG
- 2001 SABS 0228, 0229, 0230, 0231, 0232 & 1518 were referenced in Chapter VIII Dangerous Goods of the Road Traffic Act
- 1997 DOT Maritime joined the IMO & formed the SA Maritime Safety Authority with SAMSA Act 1998 to implement IMO Regulations including the IMDG Code
- 1998 SA Civil Aviation Authority was formed, later joined the ICAO Dangerous Goods Panel

# UN Model Regulations:
# Transport of Dangerous Goods

1956 – UN Committee of Experts for TDG –Transport of Dangerous Goods, Model Regulations for Classification, packaging specifications test, certification and marking, labelling, documentation & transport requirements, UN Orange Books, cascade to the Modal DG Regulations - Maritime and Aviation + ADR for Roads & AND for Rail

Purpose – to prevent accidents and harm to persons, property or damage to the environment

2003 – UN Sub-Committee of Experts for GHS added Health and Environment Hazards to the Transport Physical ones

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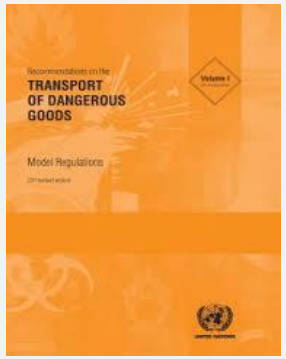
# United Nations Committee of Experts - TDG

## The UN Transport of Dangerous Goods Model Regulations provide a Framework for all Transport Modes globally




**International / Global**

- ICAO
- IMO
- IATA

**SA NDOT**

- Road Traffic Act
- SA Maritime Safety Act
- SA Civil Aviation Act
- Rail Regulator Regulations

**Regional - Europe**

- ADN
  - Inland Water
- ADR – now International
  - Road
- RID
  - Rail



**SANS 10228**
**SANS 10229**
**SANS 10231**
**SANS 10232**
**SANS 10233**
**SANS 1518**
**SANS 10263**
**SANS 10406**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# SA 2nd National Dangerous Goods Awareness Day 10 October 2025

## SA International commitments - UN TDG Model + Modal Regulations

## Ammonium Nitrate Catastrophe in Beirut, 5pm 4th August 2020

The devastating effects of the detonation of 2 750 tons of Ammonium Nitrate destroyed the Port of Beirut, a large part of the City - caused damage over a 10km radius, more than 200 deaths, 6500 injuries and left over 300 000 homeless at a cost >$15B

South Africa formed a DGSC Task Group to prevent such disasters

A Public – Private Partnership

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# South Africa's Response to the BEIRUT Incident

## Government & Industry Partnership – DG SC Task Group

GOVERNMENT

SAPS
Explosives Section

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Road Traffic Management Corporation

SAMSA SOUTH AFRICAN MARITIME SAFETY AUTHORITY

RSR Railway Safety Regulator

SOUTH AFRICAN CIVIL AVIATION AUTHORITY

TRANSNET national ports authority

NATIONAL DISASTER MANAGEMENT CENTRE

1 Data Gathering

2 Legal

3 Monitoring & Enforcement

4 Risk Assessment

5 Training & Awareness

**5 x Expert Work Groups (EWGs)**

INDUSTRY

RPMASA RESPONSIBLE PACKAGING MANAGEMENT ASSOCIATION OF SOUTHERN AFRICA

SAFEX INTERNATIONAL EST•1954

FIRE PROTECTION ASSOCIATION OF SOUTHERN AFRICA

SAERC

AECI MINING EXPLOSIVES

Enaex in association with Sasol

bme A member of the Omnia Group

omnia NUTRIOLOGY • NUTRILOGIE

SAIA

FERTASA Fertilizer Association of Southern Africa

# Initial Focus Class 1 Explosives & Class 5.1 Oxidizers

Inclusion of Regulators from all 4Transport modes, SAPS, DEL & NDMC

Colonel van Staden, SAPS Explosives Unit as Lead Agent for Class 1 & 5.1, gave a presentation on their Regulations, Operations + the Main Industry organisations who manufacture, store & Transport these Dangerous Goods

5 Expert Working Groups were agreed -

1. Data Gathering – locations and
2. Legal
3. Monitoring and Enforcement
4. Risk Assessment, Emergency Preparedness & Response
5. Training & Awareness Raising

Meeting Procedures and Terms of Reference were drafted and agreed + other regulators involved and Industry experts identified for

**A Public – Private Partnership**

extended to ALL Classes of Dangerous Goods and all Regulators involved in DG Regulation

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# Dangerous Goods Training is Key to safe Transport

- Address International obligations – see IMDG + ICAO & IATA Trainir matrix
- A Multi-modal approach recognising that ALL Transport starts by road, with ever increasingly complex Supply Chains
- It is Mandatory
- Applicable to Regulators and Industry, including -
  - ✓ Manufacturers of chemicals and dangerous articles
  - ✓ Packaging manufacturers
  - ✓ Storage and warehousing personnel
  - ✓ Transporters and Freight Forwarders
  - ✓ Waste service providers
  - ✓ Dangerous Goods Trainers should have experience, expert knowledge + understand consequences of non-compliance

**New**: QCTO Skills Programmes – DG Training for all 4 Transport Modes

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# Dangerous Goods SAFETY + need for Greater Public Awareness of DG Hazards

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## The Boksburg Tragedy - Christmas Eve 24 December 2022

A Tanker of LPG on its way from Richards Bay to Botswana deviated from its route and got stuck under a low bridge, caught fire and exploded!
More than 40 people died and many more were injured!

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DGSC-TG
Dangerous Goods Supply Chain Task Group

# National Dangerous Goods Awareness Day

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Disasters like Tianjin, Beirut and Boksburg are why we need to raise Awareness of the hazards of Dangerous Goods, and the need to comply in order to protect people, property and the environment!

**The DGSC Task Group,** and Expert Working Groups have are put a number of measures in place, and are busy with activities to help Raise Awareness and prevent such tragedies in South Africa, including –

- Participation by all Regulators with DG related Regulations for better alignment of Regulations, communication and cooperation
- New Multi-modal Skills Training with QCTO & TETA
- DG Awareness Posters in several languages
- A new Dangerous Goods Regulations Website to have all in one place
- Dangerous Goods Exercises with Multi-regulators
- **National Dangerous Awareness Day**

**Help us spread the message to ensure Training implemented to be aware of the hazards, ensure compliant packaging, marking, labelling, + placarding of vehicles to reduce incidents & accidents, and protect workers & the public**

DGSC-TG
Dangerous Goods Supply Chain Task Group

# National Dangerous Goods Awareness Day

## Share the posters – now in 5 languages

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SAFE MULTI-MODAL TRANSPORT OF DANGEROUS GOODS

# INDUSTRY TAKE NOTE

DO YOU KNOW what the following HAZARD WARNINGS MEAN?

Have you done your Risk Assessments to prevent accidents?

## THE 9 HAZARD CLASSES

| | | |
|---|---|---|
| CLASS 1 | EXPLOSIVES | May explode, leading to property damage, severe injuries, and even fatalities. |
| CLASS 2 | GASES<br>2.1 Flammable<br>2.2 Non-Flammable & Non-Toxic<br>2.3 Toxic | Stay away from items with these warnings: Red ones can explode due to flammability, and white ones can be deadly if inhaled. Examples are cylinders not handled correctly. |
| CLASS 3 | FLAMMABLE LIQUIDS | Prone to ignite and potentially explode. |
| CLASS 4 | FLAMMABLE SOLIDS<br>4.1 Flammable solids<br>4.2 Liable to spontaneous combustion<br>4.3 Emits flammable gas in contact with water | DO NOT use water to clear a spill or combat a fire! |
| CLASS 5 | 5.1 OXIDIZERS<br>5.2 ORGANIC PEROXIDES | Mixing them with other chemicals can result in fires and explosions. Temperature control is crucial for safety in Class 5.2. |
| CLASS 6 | 6.1 TOXIC<br>6.2 INFECTIOUS | HAZARDOUS TO HEALTH:<br>Can cause severe health hazard and even death. |
| CLASS 7 | RADIO-ACTIVE | Can cause severe health hazard and even death. |
| CLASS 8 | CORROSIVE | May cause severe burns to the skin and damage to eyes. |
| CLASS 9 | MISCELLANEOUS DANGEROUS GOODS, INCLUDING LITHIUM BATTERIES | Miscellaneous, be cautious with lithium batteries. Avoid overcharging or overheating, as they can explode. Never dispose of used batteries by putting them in a fire. |
| | ENVIRONMENTAL HAZARDS & MARINE POLLUTANT | These pollutants should be avoided, as they can also be toxic to humans. |

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SAFE MULTI-MODAL TRANSPORT OF DANGEROUS GOODS

# INDUSTRY TAKE NOTE

DO YOU KNOW THAT?

## DANGEROUS GOODS ARE CHEMICALS AND ARTICLES

### TRANSPORT SAFETY

**TRAINING to ensure correct Classification and UN Number:**
Proper Shipping Name – PSN, Packaging, Marking, Labelling, Loading, Documentation, Compatibility and Securing – ILO/IMO/UNECE Container Packing Code of Practice.

This includes TRAINING and AWARENESS for ALL involved in the Supply Chain of Dangerous Goods, regarding:

- The 9 Classes of Dangerous Goods
- UN numbers and PSN – Proper Shipping Name
- Compliant packagings, marking and labelling
- Requirements for multi-modal documentation
- Job Specific Training
- CTU – Container Transport Unit Packing Code of Practice
- Safety

Initial training and periodic refresher aligned to regulatory updates.
Records to be kept for Authorities to refer to in case of accidents or incidents.

### INDUSTRY RESPONSIBILITIES

- Ensure all relevant persons are Trained in their DG responsibilities
- Classify their products
- Allocate the Correct Hazard Class
- UN number and Proper Shipping Name
- Ascertain from the UN Dangerous Goods List which Packaging's are Authorised for that UN Number and to only purchase and use UN Certified Packaging's which bear the correct UN Certification Mark
- Pack and label each unit of packaging correctly
- Complete the UN Multi-modal documentation with all required information
- Load and secure correctly – ILO/IMO/UNECE CTU Code of Practice
- Placard the vehicle, Container etc. in line with the Regulations
- Conduct RISK ASSESSMENTS

### NON-COMPLIANCE CONSEQUENCES

- Accidents, Incidents
- Harm to persons, property, infrastructure and the environment
- Potential for accidents and sometimes death (Boksburg – multiple fatalities and injuries)
- Environmental impairment – disasters
- Loss and Liability
- High costs for doing things wrong
- Potential penalties for non-compliance
- Reputational damage
- Possible legal proceedings
- Possible impounding in foreign Ports – demurrage and cost of rectifying non-compliances

**BE AWARE!**
Shipping lines now charge penalties for mis-declared cargo and International Ports are vigilant in identifying non-compliance/s.
All Transport starts by road to rail, sea and air, a Multi-Modal approach is essential for safety of Dangerous Goods in the Supply Chain.

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SAFE MULTI-MODAL TRANSPORT OF DANGEROUS GOODS

# PUBLIC TAKE NOTE

*Keep away from these on the road if any accident, incident or spill occurs!*

DO YOU KNOW *what the following* HAZARD WARNINGS MEAN?

## HAZARD CLASSES

**CLASS 1: Explosives**
Can explode & cause damage to Property, severe harm to people, and even death

**CLASS 2: Gases**
**2.1 Flammable, 2.2 Non-Flammable & Non-Toxic, 2.3 Toxic**
Avoid anything with these warnings, cylinders could explode if not handled correctly + red is highly flammable and could explode and the white one is poisonous which could cause severe health or death if inhaled/breathed in

**CLASS 3: Flammable Liquids**
Liable to catch fire and even explode

**CLASS 4: Flammable Solids**
**4.1 Flammable solids, 4.2 Liable to spontaneous combustion, 4.3 emits flammable gas in contact with water:** Do NOT use water to clear a spill or combat a fire!

**CLASS 5: 5.1 Oxidizers, 5.2 Organic Peroxides**
Danger if mixed with other chemicals these can burst into flame and explode class 5.2 Need temperature control to keep safe.

**CLASS 6: 6.1 Toxic, 6.2 Infectious**
Can cause severe health hazard and even death

**CLASS 7: Radio-Active**
Can cause severe health hazard and even death

**CLASS 8: Corrosive**
Cause severe burns to the skin and damage to eyes

**CLASS 9: Miscellaneous**
Lithium batteries: Do not overcharge or heat as could explode, do not put used batteries in a fire

**ENVIRONMENTAL HAZARDS + MARINE POLLUTANT**
Stay away as can also be toxic to people