Best Practice guidelines for Safe (un)loading of Road Freight Vehicles, covering Technical, Behavioural and Organisational Aspects.

• Roles and Responsibilities
  – Improved
• BBS program
  – Significantly improved
• 10 additional chapters on various subjects.
• Electronic only
  – Internal references
  – www.Hyperlinks
  – Live updates

The writing of guidelines is in itself the subject of continuous improvement. This guideline is not meant to be printed on 66 glossy pages. The guideline contains several cross references and external hyperlinks and is designed to live its life in the virtual world.
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Part A: Organizational and Behavioural aspects

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Chapter 1: Behavioural safety has 4 levels

A tool, using a step by step approach in order to gradually improve a company’s Behavioural Safety Standard.

Level 4: Analyse unsafe behaviour
- Use a tool to analyse why people behave unsafely (e.g. ABC analysis)
- Measure the change in safety culture
- Communicate the BBS policy with customers/suppliers and encourage them to join

Level 3: Observe behaviour
- Train observers
- Set up a system of behavioural observations, provide coaching, give positive reinforcement
- Collect, record and analyse observation data
- Communicate results

Level 2: Identify at Risk behaviours and give training
- Assign a BBS Leader
- For all activities, the (at risk) safe and unsafe behaviours have been identified and listed
- A BBS training program is in place

Level 1: the basis for a BBS system
- A safety management system is in place
- It is acknowledged by the management that:
  - 90% of all injuries are related to unsafe actions, poor decisions or at risk behaviour
  - The safety culture can be improved by a BBS system, involving ALL employees
  - The management must show their commitment by creating a safe working environment
Chapter 2. Roles and Responsibilities

- The previous edition of this guideline: **Behaviour Based Safety Guidelines for the safe loading & unloading of road freight vehicles. Issue 2 March 2007**
- who is to be expected to perform what task
- largely standardising the organisational part of the (un)loading process
- is a best practice now
- some additions and clarifications

<table>
<thead>
<tr>
<th>Site</th>
<th>Transport Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site instructions</td>
<td>The transport company will communicate the received site's requirements to all involved people.</td>
</tr>
<tr>
<td>The management of the site should ensure that the site's requirements are communicated to the transport company management and that safety procedures are communicated to the drivers upon arrival. Management must promote and maintain safety awareness, particularly during product handling. The management ensures that (un)loading operations are carried out under site supervision.</td>
<td></td>
</tr>
<tr>
<td>Transport company</td>
<td>Site instructions</td>
</tr>
<tr>
<td>The transport company will communicate the received site’s requirements to all involved people.</td>
<td></td>
</tr>
</tbody>
</table>

Please see [SULIC: Site (Un)Loading Information Document](#) for more details.

- Working at height
- The management of the site should provide safe conditions for working at height (including safe access to top of vehicles) in conformity with the applicable legislation.
- The transport company must comply with the “Working at Height” guideline.

Ref: [ECTAGCFIC: Best Practice Guidelines for the Safe Working at Height in the Chemical Logistics Supply Chain](#)

- Product quality
- The preferred option is product acceptance on the basis of a Certificate of Analysis. Taking samples from vehicles should be avoided. If the taking of samples is required, the management of the site must ensure that samples are taken by qualified site personnel or by appointed surveyors with adequate safety precautions.
- Drivers are instructed not to take product samples.

- Filling degree
- The application of ADR rule 4.3.2.2.4 (2013) should also be applied for the carriage of non-Dangerous goods.
- 4.3.2.2.4 states that the carriage of substances in an empty state or liquefied gases of refrigerated liquefied gases, which are not divided by partitions or surge gates into sections of not more than 7,500 litres capacity, shall be filled to not less than 80% or not more than 90% of their capacity.
Chapter 3. SQAS and ESAD
Chapter 5. Applicable Legislation

- An overview of the applicable legislation so all parties of the supply chain gain insight into the legislation from supplier to customer.
- To illustrate in what respect they need to work together.

Safe working place – unloading site for own operators and third party employees like drivers

Visitor management – unloading site

Appropriate unloading installation – unloading site

Type and use of PPE – unloading site and carrier

Liquid tight floor – unloading site

Annex 5: Hierarchy and lists of applicable legislation
Linguistic problem in Europe?
Is there a single solution?
6. Communication Skills of Drivers and Operators

Most common sources for discussion and unsafe actions during (un)loading:

Drivers and Operators do not share a common language?

- a short set of 142 expressions in English
- Translations of the list available in 26 languages
## 8. Annex 8 Examples of pictographic loading instructions

To ensure the instructions given to the driver are understood, the use of expressions in Annex 7, **Understanding expressions (not in English)**, might not be sufficient. Rather than issuing procedures in full text format pictograms, pictures or cartoons can be used.

### 8.1 Examples of Pictographic loading rules

<table>
<thead>
<tr>
<th>Text</th>
<th>Cartoon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whilst on the site, drivers must wear a safety hat, safety shoes,</td>
<td><img src="image1.png" alt="Cartoon" /></td>
</tr>
<tr>
<td>high visibility vest, gloves and working clothes that fully cover</td>
<td><img src="image2.png" alt="Cartoon" /></td>
</tr>
<tr>
<td>arms and legs at all times. Wear ear protection and safety goggles</td>
<td><img src="image3.png" alt="Cartoon" /></td>
</tr>
<tr>
<td>where indicated. Safety hand/foot protection must be used in the</td>
<td><img src="image4.png" alt="Cartoon" /></td>
</tr>
<tr>
<td>loading area.</td>
<td></td>
</tr>
<tr>
<td>You are strictly prohibited from taking unauthorised persons as</td>
<td><img src="image5.png" alt="Cartoon" /></td>
</tr>
<tr>
<td>well as animals onto the site.</td>
<td></td>
</tr>
<tr>
<td>In the event of an alarm: Immediately follow the instructions</td>
<td><img src="image6.png" alt="Cartoon" /></td>
</tr>
<tr>
<td>from Site personnel.</td>
<td></td>
</tr>
<tr>
<td>After entering the site, you must proceed immediately and direct</td>
<td><img src="image7.png" alt="Cartoon" /></td>
</tr>
<tr>
<td>to the loading location.</td>
<td></td>
</tr>
</tbody>
</table>

*a picture is worth a thousand words*
Part B Technical aspects

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7 Technical requirements (un)loading sites

gives an overview of technical measures to be considered for an (un)loading place to mitigate the risks of (un)loading a chemical product.

– Overfill protection
– Vapour return systems
– ....

<table>
<thead>
<tr>
<th>Measure</th>
<th>Product risk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dry bulk</td>
</tr>
<tr>
<td></td>
<td>not classified (ADR)</td>
</tr>
<tr>
<td></td>
<td>Other Classified (ADR)</td>
</tr>
<tr>
<td></td>
<td>Toxic (ADR Class 6.1)</td>
</tr>
<tr>
<td></td>
<td>Flammable (ADR Class 3)</td>
</tr>
<tr>
<td></td>
<td>Reactive chemicals</td>
</tr>
<tr>
<td>Overflow of transport tank/ silo and/or land tank/ silo</td>
<td>R</td>
</tr>
<tr>
<td>High Level Alarm in land tank/silo loading arm</td>
<td>R</td>
</tr>
<tr>
<td>High Level Switch in Land tank/loading arm interlocked with loading</td>
<td>R</td>
</tr>
<tr>
<td>mechanism</td>
<td></td>
</tr>
<tr>
<td>High level alarm/switch in transport tank/silo</td>
<td>NR</td>
</tr>
<tr>
<td>Level indicator land tank/ silo</td>
<td>R</td>
</tr>
<tr>
<td>Flow meter on filling line</td>
<td>R</td>
</tr>
</tbody>
</table>
8. SULID

- Every employer shall take appropriate measures so that employers of workers from any outside undertakings and/or establishments engaged in work in his undertaking and/or establishment receive, in accordance with national laws and/or practices, adequate information concerning:
  a) the safety and health risks and protective and preventive measures and activities in respect of both the undertaking and/or establishment in general and each type of workstation and/or job;
  (b) the measures taken for the points referred to in paragraph a.
9. Information, Instructions and Training for Drivers and Operators

1. General information and instructions for drivers and operators
   1. Loading/unloading instructions
   2. Emergencies and Alarms
   3. Health and environment
   4. Reporting of injuries, incidents, unusual events and environmental complaints
   5. Communication formats

2. Driver specific information and instructions
   1. Drivers access rules
   2. Site circulation instructions, traffic rules, truck (un)loading preparation
   3. PPE
   4. Do's
   5. Don’ts
   6. Product specific training

3. Operator specific information and instructions
# PPE for Drivers

## Bulk Liquid / Bulk Solid / Packed & D&S

<table>
<thead>
<tr>
<th>PPE</th>
<th>Reference to standard</th>
<th>Type of operation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Spectacles</td>
<td>EN 166-3 with side protection</td>
<td>Type 1: Drivers loading and unloading packaged goods + drop and swap operations</td>
<td>Protection against liquid droplets/spills. Minimum EN 166 with side protection. This side protection is guaranteed if special shaped spectacles are used. If straight shape spectacles are used, side protectors are to be present.</td>
</tr>
<tr>
<td>Protective clothing</td>
<td>Arms + legs + body covered</td>
<td>Type 2: Drivers loading and unloading bulk granulates or other solid chemicals without danger classification</td>
<td>For packaged goods, drop and swap and bulk granulates protective clothing which covers arms + legs + body is sufficient. Steel toe, anti-static, absorption around heel. Safety boots are acceptable too. Rigid or steel soles are not recommended as it is uncomfortable for driving. Clogs, even EN 20345 are not accepted.</td>
</tr>
</tbody>
</table>
| Safety shoes         | EN 20345 S1 – closed       | Type 3: Drivers loading and unloading bulk liquids (ADR and non-ADR) and solids (ADR) | Industrial helmet protection. Safety caps do not provide sufficient protection from falling objects. Safety gloves with protection against mechanical risks. High-visibility clothing for professionals – warning vest. Same standard of high-visibility clothing is already required for ADR as well as for all drivers in most European countries. Safety gloves with protection against chemical risks. Safety gloves with protection against chemical risks. JKL: test chemicals are n-heptane, NaOH 40% and H₂SO₄ 96%.  
  - Protective clothing with limited flame spread properties.  
  - Protection against the danger caused by static electricity.  
  - Limited protection against liquid chemicals, type P(6).  
  As S1 + water resistance of upper. In some circumstances safety boots may be required. Rigid or steel soles are not recommended as it is uncomfortable for driving. Clogs, even EN 20345 are not accepted. |
| Helmet               | EN 397                      |                                                                                   |                                                                                                                                                                                                          |
| Safety gloves (mech. risks) | EN 388              |                                                                                   |                                                                                                                                                                                                          |
| Warning vest         | EN 471                      |                                                                                   |                                                                                                                                                                                                          |
| Fall arrest harness  | EN 361                      |                                                                                   |                                                                                                                                                                                                          |
| Safety goggles       | EN 166                      |                                                                                   |                                                                                                                                                                                                          |
| Safety gloves (chem. risks) | EN 374 JKL or according to product |                                                                                   |                                                                                                                                                                                                          |
| Protective clothing  | EN 533, EN 1149/5, EN 13034 type 6 |                                                                                   |                                                                                                                                                                                                          |
| Safety shoes         | EN 20345 S2 – closed       |                                                                                   |                                                                                                                                                                                                          |
Couplings and Hoses

- DIN 80 PN 10
Thank you for your attention