



SAP Transportation Management Integration of SAP TM with Dangerous Goods

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Type Style	Description
<i>Example text</i>	Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Cross-references to other documentation.
Example text EXAMPLE TEXT	Emphasized words or phrases in body text, graphic titles, and table titles. Technical names of system objects. These include report names, program names, transaction codes, table names, and key concepts of a programming language when they are surrounded by body text, for example, SELECT and INCLUDE.
Example text	Output on the screen. This includes file and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.
Example text	Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.
<Example text>	Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.
EXAMPLE TEXT	Keys on the keyboard, for example, F2 or ENTER.

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Integration of SAP TM with Dangerous Goods

This document explains how you can integrate dangerous goods into SAP Transportation Management.



1 Activating Business Functions

Business functions are individual standard applications and industry solutions in your ABAP-based SAP system. We provide new features and enhancements in self-contained units using these business functions for your existing SAP installations.

Procedure

1. In SCM Basis, on the *SAP Easy Access* screen, call transaction `SEW5`.
2. Activate the business function `SCM_EHS_DG_CI_1`. The business function activates the *DG Mixed Loading Check* functionality.



Once you have activated a business function, you can no longer cancel the enhancements it makes in the system.

More Information

For more information, see SAP Library for SAP Enhancement Package 4 for SAP ERP 6.0 at <http://help.sap.com/erp>. In SAP Library, choose *Business Functions (SAP Enhancement Package 4 for SAP ERP 6.0)*.



2 Configuring Settings in SAP ERP

You can use this process to make configuration settings concerning dangerous goods in SAP ERP that are needed for the integration with SAP Transportation Management (SAP TM).

1. [Creating Material Master Data](#) [Page 8]

You create material master data that contains information on all the dangerous goods materials that a company transports. It is the central source for retrieving this data. This information is stored in individual material master records.

2. [Considering Dangerous Goods Regulations](#) [Page 9]

You can check dangerous goods regulations in Customizing for SAP ERP for the means of transport category.

3. [Creating Dangerous Goods Master Data](#) [Page 11]

You can add dangerous goods regulations to your dangerous goods master data.

4. [Changing Dangerous Goods Master Records](#) [Page 12]

You can change dangerous goods master records.



2.1 Creating Master Data for Materials

Prerequisites

You have specified the indicator profiles for the material master in Customizing for SAP ERP under ► *Environment, Health and Safety* ► *Dangerous Goods Management* ► *Dangerous Goods Checks and Dangerous Goods Documents/EDI* ► *Common Settings* ► *Specify Indicator Profiles for the Material Master* ►.

Procedure

1. In SAP ERP, on the *SAP Easy Access* screen, in the *SAP menu*, choose ► *Logistics* ► *Materials Management* ► *Material Master* ► *Material* ► *Create (General)* ► *MM01 — Immediately* ►.

The *Create Material* screen appears.

2. On the *Basic data 2* tab page, in the *Environment* group box, in the *DG indicator profile* field, set the DG indicator profile, for example, you can set it to *GPP*. You can assign exactly one indicator profile to each material master record.



2.2 Considering Dangerous Goods Regulations

With this function you ensure that each master data record is assigned to the correct regulation. Each time you create or change the dangerous goods (DG) master data record, you must enter the regulation on which the record is based.

Each regulation is identified uniquely by a language-dependent abbreviation. The following are the most common regulations:

- ADR
Accord européen relatif au transport international des marchandises Dangereuses par Route. DG Regulation in Europe for transportation of hazardous materials by road.
- RID
Règlement concernant le transport international ferroviaire de marchandises dangereuses. DG Regulation in Europe for transportation of hazardous materials by rail.
- ADN
Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure. DG Regulation in Europe for transportation of hazardous materials by waterway.
- IMDG
International Maritime Code for Dangerous Goods DG Regulation. International DG Regulation for transportation on the high seas.
- IATA-DGR
International Air Transport Association Dangerous Goods Regulations.

You also check the dangerous goods classes and classification codes for the DG regulations. The following are the most common DG classes:

- Class 1: Explosives
- Class 2: Gases
- Class 3: Flammable Liquids
- Class 5: Oxidizing Agents and Organic Peroxides
- Class 6: Toxic and Infectious Substances
- Class 7: Radioactive Substances
- Class 8: Corrosive Substances

Procedure

1. Check the DG regulations for the means of transport category in Customizing for SAP ERP under **Environment, Health and Safety > Dangerous Goods Management > Basic Data and Master Data > Common Settings > Specify Dangerous Goods Regulations**.

2. Check the DG classes that are assigned to the DG Regulations in Customizing for SAP ERP under **Environment, Health and Safety > Dangerous Goods Management > Basic Data and Master Data > Common Settings > Specify Dangerous Goods Classes and Classification Codes**.



2.3 Creating Dangerous Goods Master Records

Procedure

1. In SAP ERP, on the *SAP Easy Access* screen, in the SAP menu, choose ► *Logistics* ► *Environment, Health and Safety* ► *Dangerous Goods Management* ► *Create Dangerous Goods Master Records* ⌵. You can also use transaction `DGP1`.

The *Create Dangerous Goods Master: Initial Screen* screen appears.

2. Enter the required data, and choose *Continue*.

The *Create Dangerous Goods Master* screen appears.

3. On the *Classification* tab page, make the following entries:
 - *Type*
 - *ID Number*
 - In the phrase selection list, choose *Dangerous Goods Descriptions*.
 - *Class*
4. To release the DG master data record, on the *SAP Easy Access* screen, choose *Change Dangerous Goods Master Records*. You must release the data, otherwise it cannot be used productively. For more information, see [Changing Dangerous Goods Master Records](#) [Page 12].



2.4 Changing Dangerous Goods Master Records

You can change DG master records. When you change a record, you must also release it.

Procedure

1. On the *SAP Easy Access* screen for SAP ERP, choose ► *Logistics* ► *Environment, Health and Safety* ► *Dangerous Goods Management* ► *Change Dangerous Goods Master Records* . You can also use transaction `DGP2`.

The *Change Dangerous Goods Master: Initial Screen* screen appears.

2. In the *Process Status* field, enter `10` or select *Released* to release DG master records.
3. Save your entries.



3 Configuration Settings for Dangerous Goods Data Transfer

You can use this process to make configuration settings in the SAP ERP system and in SAP TM system that are needed for the data transfer between both systems.

The dangerous goods master data and the text phrases are distributed by ALE (Application Link Enabling). The system distributes material master data using CIF (Core Interface).

Process

1. [Creating tRFC Ports](#) [Page 14]
2. [Creating Partner Profiles in the ERP System](#) [Page 15]
3. [Creating Partner Profiles in SAP TM](#) [Page 16]
4. [Creating a Distribution Model in SAP ERP](#) [Page 17]
5. [Displaying the Distribution Model Log File in SAP TM](#) [Page 18]
6. [Activating Change Pointers in SAP ERP](#) [Page 19]
7. [Transferring Dangerous Goods Master Data to SAP TM](#) [Page 20]



3.1 Creating tRFC Ports

You create tRFC ports in SAP ERP for the use in SAP TM.

Prerequisites

You have created the Remote Function Call (RFC) destinations *ABAP Connection* in *SM59*.

Procedure

1. In the SAP ERP system, open transaction *WE21*.
The *Ports in IDoc processing* screen appears.
2. In the left pane, open the *Transactional RFC* folder and create a new entry.
3. Create a partner profile for your SAP ERP system. For more information, see [Creating Partner Profiles in the ERP System](#) [Page 15].



3.2 Creating Partner Profiles in SAP ERP

Procedure

1. In the SAP ERP, open transaction WE20.

The *Partner profiles* screen appears.

2. Open the *Partner Type LS* folder and on the *Post processing: permitted agent* tab page, create a new entry without inbound or outbound parameters. Use your user as agent.
3. Perform the same procedure for the SAP TM system, but add the outbound parameter DANGEROUSGOOD in the *Message Type* field.
4. Fill in the required fields and the port, you have created. If you see yellow system messages, choose the *Enter* pushbutton. In the *Package size* field, enter 1 and select the *IDOC Type* DANGEROUSGOOD04. Save your entries.
5. Add the following outbound options:
 - HAZARDOUSSUBSTANCE; IDOC Type: HAZARDOUSSUBSTANCE01
 - PHRMAS; IDOC Type:PHRMAS01
 - SYNCH; IDOC Type: SYNCHRON



You can check the Basic IDOC types in transaction WE30.



3.3 Creating Partner Profiles in SAP TM

Procedure

1. In the SAP TM system, open transaction WE20.

The *Partner profiles* screen appears.

2. Open the *Partner Type LS* folder and on the *Post processing: permitted agent* tab page, create a new entry.
3. On the *Inbound Options* tab page, add the following inbound parameters:
 - DANGEROUSGOODS
 - PHRMAS
 - SYNCH



3.4 Creating a Distribution Model in SAP ERP

Procedure

1. In the SAP ERP system, open transaction `BD64`.
The *Change Distribution Model* screen appears.
2. Choose *Create Model View*.
The *Create Model View* dialog box appears.
3. Create a model view for Environment, Health and Safety (EH&S).
4. Choose *Add BAPI*, enter the required data and save your entries.
5. Add the following BAPIs:
 - `BUS1078; Method SAVEREPLICAMULTIPLE`
 - `BUS1091; Method SAVREPMUL`
 - `BUS1119; Method SAVEREPLICATE`



3.5 Displaying the Distribution Model Log File in SAP TM

Procedure

1. In the SAP ERP system, open transaction `BD64`.

The *Change Distribution Models* screen appears.

2. Select a model view and choose **▶ Edit ▶ Model View ▶ Distribute ▶**.

The *Distribute Model View* dialog box appears.

3. Select the logical system of SAP TM and choose *Continue*.

The system writes the log file in the target SAP TM system.

4. In the SAP TM system, open transaction `BD64`.

You can display the log file.



3.6 Activating Change Pointers in SAP ERP

In the standard system, writing change pointers is switched off for all message types.

More Information

For more information, see Customizing for SAP NetWeaver under [Application Server](#) > [IDoc Interface / Application Link Enabling \(ALE\)](#) > [Modeling and Implementing Business Processes](#) > [Master Data Distribution](#) > [Replication of Modified Data](#) > [Activate Change Pointers for Message Types](#).



3.7 Transferring Dangerous Goods Master Data to SAP TM

Procedure

1. In the SAP ERP system, open transaction `DGP5`.

The *Send Dangerous Goods Master* screen appears.

2. In the *Scenario: Selective distribution* group box, in the *Material* field, choose the dangerous goods material and choose *Execute*.

You have transferred the data.

3. In the SAP TM system, you can check if the data is transferred successfully. Open the *SAP Easy Access* menu under **► Master Data ► Dangerous Goods Management ► Display Dangerous Goods Master ►**.



As an alternative to CIF, you can use Application Link Enabling (ALE) to transfer DG master data to SAP TM. For the configuration of the SAP TM scenarios delivered with SAP Solution Manager, master data transfer is described using the CIF interface. For more information, see the *Basic Settings and Integration for SAP ERP* configuration guide.



4 Phrase Management

This function supports the central management of text modules called phrases. You use phrases to add dangerous goods texts to dangerous goods documents. Phrases are managed in phrase libraries, from which you select one library for editing data.

Activities

You perform the following activities:

- [Specifying Phrase Management Settings in SCM Basis](#) [Page 22]
- [Creating Phrase Sets](#) [Page 23]
- [Configuring Phrase Sets](#) [Page 24]
- [Creating Phrases](#) [Page 25]
- [Distributing Phrase Master Data from SAP ERP to SAP TM](#) [Page 26]

More Information

For more information about phrase management, see SAP Library for SAP Supply Chain Management at ► <http://help.sap.com/scm> ► *SAP SCM Server* ►. In SAP Library, choose ► *SCM Basis* ► *EH&S Services in SCM Basis* ► *Phrase Management* ►.



4.1 Specifying Phrase Management Settings in SCM Basis

Procedure

1. Specify the number ranges. For information, see Customizing for *SCM Basis* under ► *EH&S Services* ► *Phrase Management* ► *Specify Number Ranges for Phrases* ►.
2. Specify the libraries. For information, see Customizing for *SCM Basis* under ► *EH&S Services* ► *Phrase Management* ► *Specify Phrase Libraries and Phrase Groups* ►.
3. Specify the language selection. For information, see Customizing for *SCM Basis* under ► *EH&S Services* ► *Phrase Management* ► *Specify Language Selection* ►.



4.2 Creating Phrase Sets

Procedure

1. In SAP TM, on the *SAP Easy Access* screen, open ► *Master Data* ► *Dangerous Goods Management* ► *Phrase Management* ► *Edit Phrase Sets* ⌵.

The *Edit Phrase Set: Initial Screen* screen appears.

2. Choose *Create*.

The *Create Phrase Set: Header* screen appears.

3. Enter the required data and save your entries.



4.3 Configuring Phrase Sets

Procedure

1. In the SAP TM system, in Customizing for *SCM Basis*, choose ► *EH&S Services* ► *Dangerous Goods Management* ► *Dangerous Goods Master* ► *Activate Phrase Assignment* ▾.

To activate phrase assignment, select *Attribute Activation* and choose *Execute*.

2. In the SAP TM system, in Customizing for *SCM Basis*, choose ► *EH&S Services* ► *Dangerous Goods Management* ► *Dangerous Goods Master* ► *Create Standard Phrase Sets* ▾.

To create standard phrase sets, choose *Yes*.



4.4 Creating Phrases

You can create and edit phrases in both SAP ERP and SAP TM.

Prerequisites

- You have specified the phrase library in Customizing for *Transportation Management* under **EH&S Services** > *Phrase Management* > *Specify Phrase Libraries and Phrase Groups*.
- You have selected the phrase languages in Customizing for *Transportation Management* under **EH&S Services** > *Phrase Management* > *Specify Phrase Libraries and Phrase Groups*.
- You have created a phrase set.

Procedure

1. In SAP TM, on the *SAP Easy Access* screen, open **Master Data** > *Dangerous Goods Management* > *Phrase Management* > *Edit Phrases*.

The *Edit Phrases: Initial Screen* screen appears.

2. Choose *Create*.

The *Create Phrase: Header* screen appears.

3. Enter the required data and save your entries.
4. Choose *Phrase Items*.

The *Create Phrase: Item* screen appears.

5. Enter the required data and save your entries.

More Information

[Distributing Phrase Master Data from SAP ERP to SAP TM](#) [Page 26]



4.5 Distributing Phrase Master Data from SAP ERP to SAP TM

You can transfer phrases and phrase sets that you have created in SAP ERP to SAP TM.

Procedure

1. In the SAP ERP system, open transaction CG12.

The *Edit Phrase: Initial Screen* screen appears. The system displays the default phrase library.

2. Select the phrase group DG-TEXT and press *Enter*.
3. In the menu, select ► *Phrase* ► *Data Exchange* ► *ALE According to Distribution Model* ⌵.

The system has distributed the phrases to SAP TM. To check the result, open transaction BD87.



Check the number ranges in Customizing for *SCM Basis* under ► *Phrase Management* ► *Specify Number Ranges for Phrases* ⌵.



5 SAP TM Customizing Settings

With the following functions, you activate dangerous goods processing. In Customizing, you can define the level or process step at which the dangerous goods checks are active. The checks can be active either during freight unit building or during planning with VSR-optimizer. You can use standard processing strategies for dangerous goods checks and printing.

Activities

- You define common settings in Customizing for *Transportation Management* under [Basic Functions](#) > [Dangerous Goods](#) > [Define Common Settings for Dangerous Goods Processing](#).

You can define your own strategies for printing and checks using a Business Add-In (BAI). For more information, see Customizing for *Transportation Management* under [Business Add-Ins \(BAIs\) for Transportation Management](#) > [Basic Functions](#) > [Dangerous Goods](#) > [BAI: Definition of Data for Printing and Checking for Dangerous Goods](#).



In SCM Basis you specify the dangerous goods methods. If you do not specify how you use the dangerous goods feature, the system checks the dangerous goods by default. For example, the system checks all means of transports and products.

For more information, see Customizing for *SCM Basis* under [EH&S Services](#) > [Dangerous Goods Management](#) > [Dangerous Goods Checks and Dangerous Goods Documents](#) > [Dangerous Goods Checks](#) > [Specify Dangerous Goods Check Method](#).

For more information, see Customizing for *SCM Basis* under [EH&S Services](#) > [Dangerous Goods Management](#) > [Dangerous Goods Checks and Dangerous Goods Documents](#) > [Dangerous Goods Checks](#) > [Specify Usage Profiles for Dangerous Goods Check Method](#).

- You define a dangerous goods profile in Customizing for *Transportation Management* under [Basic Functions](#) > [Dangerous Goods](#) > [Define Dangerous Goods Profile](#). You activate dangerous goods checks and messages. The profile defines general conditions for processing dangerous goods, for example, conditions for displaying error messages.

You can set the default mode of transport (MoT) for stages in case mode of transport information is not transferred from SAP ERP documents. The system can determine a phrase for printing and text only with the MoT information.

- You assign the dangerous goods profile to the business document types, in which the dangerous goods checks will be active. The check is active only in these business documents.

Assign the dangerous goods profile to forwarding order types in Customizing for *Transportation Management* under [Forwarding Order Management](#) > [Define Forwarding Order Types](#).

Assign the dangerous goods profile to forwarding quotation types in Customizing for *Transportation Management* under ► *Forwarding Order Management* ► *Define Forwarding Quotation Types* ▾.

Assign the dangerous goods profile to transportation requirement types that are based on orders in Customizing for *Transportation Management* under ► *Integration* ► *ERP Logistics Integration* ► *Order-Based Transportation Requirement* ► *Define Order-Based Transportation Requirement Types* ▾.

Assign the dangerous goods profile to transportation requirement types that are based on deliveries in Customizing for *Transportation Management* under ► *Integration* ► *ERP Logistics Integration* ► *Order-Based Transportation Requirement* ► *Define Order-Based Transportation Requirement Types* ▾.



6 Specifying Settings for a Mixed Loading Check

You can use segregation keys to separate material onto different transportation vehicles. You can also use segregation keys to create segregation rules.

Prerequisites

- You have activated the business function `SCM_EHS_DG_CI_1`. For more information, see [Activating Business Functions](#) [Page 6].
- You have specified tab pages for dangerous goods master. For more information, see Customizing for *SCM Basis* under ► *EH&S Services* ► *Dangerous Goods Management* ► *Dangerous Goods Master* ► *Specify Tab Pages in Dangerous Goods Master* ►.

Procedure

1. Specify the segregation keys. For more information, see Customizing for *SCM Basis* under ► *EH&S Services* ► *Dangerous Goods Management* ► *Dangerous Goods Checks and Dangerous Goods Documents* ► *Dangerous Goods Checks* ► *Specify Settings for Mixed Loading Checks* ► *Specify Segregation Keys* ►.
2. In the SAP Easy Access menu, open under ► *SCM Basis* ► *EH&S Services* ► *Dangerous Goods Management* ► *Dangerous Goods Master* ► *Edit Dangerous Goods Master* ►. Edit the segregation keys.
3. Assign the segregation keys for the different products to the rules for the mixed loading check, and select the response. The system displays a response if the check is positive. For more information, see Customizing for *SCM Basis* under ► *EH&S Services* ► *Dangerous Goods Management* ► *Dangerous Goods Checks and Dangerous Goods Documents* ► *Dangerous Goods Checks* ► *Specify Settings for Mixed Loading Checks* ► *Specify Segregation Rules for Segregation Keys* ►.