

# Classifying and Loading of Crude Oil into Rail Tank Cars

ANSI/API RECOMMENDED PRACTICE 3000  
FIRST EDITION, SEPTEMBER 2014



AMERICAN PETROLEUM INSTITUTE



This is a preview. [Click here to purchase the full publication.](#)

## Special Notes

API publications necessarily address problems of a general nature. With respect to particular circumstances, local, state, and federal laws and regulations should be reviewed.

Neither API nor any of API's employees, subcontractors, consultants, committees, or other assignees make any warranty or representation, either express or implied, with respect to the accuracy, completeness, or usefulness of the information contained herein, or assume any liability or responsibility for any use, or the results of such use, of any information or process disclosed in this publication. Neither API nor any of API's employees, subcontractors, consultants, or other assignees represent that use of this publication would not infringe upon privately owned rights.

API publications may be used by anyone desiring to do so. Every effort has been made by the Institute to assure the accuracy and reliability of the data contained in them; however, the Institute makes no representation, warranty, or guarantee in connection with this publication and hereby expressly disclaims any liability or responsibility for loss or damage resulting from its use or for the violation of any authorities having jurisdiction with which this publication may conflict.

API publications are published to facilitate the broad availability of proven, sound engineering and operating practices. These publications are not intended to obviate the need for applying sound engineering judgment regarding when and where these publications should be utilized. The formulation and publication of API publications is not intended in any way to inhibit anyone from using any other practices.

Any manufacturer marking equipment or materials in conformance with the marking requirements of an API standard is solely responsible for complying with all the applicable requirements of that standard. API does not represent, warrant, or guarantee that such products do in fact conform to the applicable API standard.

Users of this Recommended Practice should not rely exclusively on the information contained in this document. Sound business, scientific, engineering, and safety judgment should be used in employing the information contained herein.

API is not undertaking to meet the duties of employers, manufacturers, or suppliers to warn and properly train and equip their employees, and others exposed, concerning health and safety risks and precautions, nor undertaking their obligations to comply with authorities having jurisdiction.

Information concerning safety and health risks and proper precautions with respect to particular materials and conditions should be obtained from the employer, the manufacturer or supplier of that material, or the material safety data sheet.

Where applicable, authorities having jurisdiction should be consulted.

Work sites and equipment operations may differ. Users are solely responsible for assessing their specific equipment and premises in determining the appropriateness of applying the Recommended Practice. At all times users should employ sound business, scientific, engineering, and judgment safety when using this Recommended Practice.

All rights reserved. No part of this work may be reproduced, translated, stored in a retrieval system, or transmitted by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission from the publisher. Contact the Publisher, API Publishing Services, 1220 L Street, NW, Washington, DC 20005.

*Copyright © 2014 American Petroleum Institute*

[This is a preview. Click here to purchase the full publication.](#)

## Foreword

Nothing contained in any API publication is to be construed as granting any right, by implication or otherwise, for the manufacture, sale, or use of any method, apparatus, or product covered by letters patent. Neither should anything contained in the publication be construed as insuring anyone against liability for infringement of letters patent.

The verbal forms used to express the provisions in this specification are as follows:

- the term “shall” denotes a minimum requirement in order to conform to the specification;
- the term “should” denotes a recommendation or that which is advised but not required in order to conform to the specification;
- the term “may” is used to express permission or a provision that is optional;
- the term “can” is used to express possibility or capability.

This document was produced under API standardization procedures that ensure appropriate notification and participation in the developmental process and is designated as an API standard. Questions concerning the interpretation of the content of this publication or comments and questions concerning the procedures under which this publication was developed should be directed in writing to the Director of Standards, American Petroleum Institute, 1220 L Street, NW, Washington, DC 20005. Requests for permission to reproduce or translate all or any part of the material published herein should also be addressed to the director.

Generally, API standards are reviewed and revised, reaffirmed, or withdrawn at least every five years. A one-time extension of up to two years may be added to this review cycle. Status of the publication can be ascertained from the API Standards Department, telephone (202) 682-8000. A catalog of API publications and materials is published annually by API, 1220 L Street, NW, Washington, DC 20005.

Suggested revisions are invited and should be submitted to the Standards Department, API, 1220 L Street, NW, Washington, DC 20005, [standards@api.org](mailto:standards@api.org).



# Contents

	Page
<b>1 Scope</b>	<b>1</b>
<b>2 Normative References</b>	<b>1</b>
<b>3 Terms and Definitions</b>	<b>2</b>
<b>4 Roles and Responsibilities</b>	<b>8</b>
4.1 General	8
4.2 Offeror	8
4.3 Consignor	8
4.4 Pre-transportation Functions	8
4.5 Function-specific Responsibilities	9
<b>5 Classifying Crude Oil for Transportation by Rail</b>	<b>10</b>
5.1 Identification of the Physical and Chemical Properties of Crude Oil	10
5.2 Hydrogen Sulfide (H <sub>2</sub> S) Risk and Additional Marking Requirements	12
5.3 Corrosivity Risk	12
5.4 Selection of Proper Shipping Name (PSN) and Associated UN ID Number	12
5.5 Documentation of Transportation Requirements	13
5.6 Sampling and Testing	13
<b>6 Determining the Loading Target Quantity (LTQ)</b>	<b>17</b>
6.1 General	17
6.2 Volumetric or Weight Loading Target Quantity (LTQ)	17
6.3 Calculating the Loading Target Quantity (LTQ)	18
6.4 Measurement Equipment and Processes	20
6.5 Other Operational Considerations	22
<b>7 Record Retention</b>	<b>23</b>
<b>Annex A (informative) Sampling and Testing Program Example</b>	<b>24</b>
<b>Annex B (informative) Example for Calculating LTQ</b>	<b>25</b>
<b>Annex C (informative) Summary of Roles, Responsibilities and Training Requirements of Hazmat Employees</b>	<b>32</b>
<b>Annex D (informative) Shipping Paper</b>	<b>35</b>
<b>Bibliography</b>	<b>37</b>
<b>Figures</b>	
B.1 Segment 1 Example	26
B.2 Segment 2 Example	27
B.3 Segment 3 Example	28
B.4A Segment 4A Example	29
B.4B Segment 4B Example	30
B.5 Segment 5 Example	31
B.6 Segment 6 Example	31

## Contents

Page

### Tables

<b>1</b>	<b>Criteria for Assignment of PG for a Class 3 Flammable Liquid . . . . .</b>	<b>11</b>
<b>2</b>	<b>Flash Point Test Methods for the Assignment of PG . . . . .</b>	<b>14</b>
<b>3</b>	<b>Initial Boiling Point Test Methods for the Assignment of PG . . . . .</b>	<b>15</b>
<b>4</b>	<b>Initial Boiling Point Alternative Test Methods for the Assignment of PG . . . . .</b>	<b>16</b>
<b>5</b>	<b>Reference Temperature Requirement Table . . . . .</b>	<b>17</b>
<b>C.1</b>	<b>Roles, Responsibilities and Training Requirements of Hazmat Employees . . . . .</b>	<b>32</b>
<b>D.1</b>	<b>Example Proper Shipping Descriptions for IT Waybill Systems . . . . .</b>	<b>35</b>