



# UL 558

## STANDARD FOR SAFETY

Industrial Trucks, Internal Combustion  
Engine-Powered

ULNORM.COM : Click to view the full PDF of UL 558 2021

[ULNORM.COM](https://ULNORM.COM) : Click to view the full PDF of UL 558 2021

UL Standard for Safety for Industrial Trucks, Internal Combustion Engine-Powered, UL 558

Tenth Edition, Dated January 10, 2012

### **Summary of Topics**

***This revision to ANSI/UL 558 dated October 22, 2021 includes requirements for Diesel Exhaust Fluid (DEF) constructions used in industrial trucks; [5.2](#), [10.3.1](#), [Table 10.1](#), [10.6](#), and [43.1](#).***

Text that has been changed in any manner or impacted by UL's electronic publishing system is marked with a vertical line in the margin.

The new and revised requirements are substantially in accordance with Proposal(s) on this subject dated July 2, 2021.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form by any means, electronic, mechanical photocopying, recording, or otherwise without prior permission of UL.

UL provides this Standard "as is" without warranty of any kind, either expressed or implied, including but not limited to, the implied warranties of merchantability or fitness for any purpose.

In no event will UL be liable for any special, incidental, consequential, indirect or similar damages, including loss of profits, lost savings, loss of data, or any other damages arising out of the use of or the inability to use this Standard, even if UL or an authorized UL representative has been advised of the possibility of such damage. In no event shall UL's liability for any damage ever exceed the price paid for this Standard, regardless of the form of the claim.

Users of the electronic versions of UL's Standards for Safety agree to defend, indemnify, and hold UL harmless from and against any loss, expense, liability, damage, claim, or judgment (including reasonable attorney's fees) resulting from any error or deviation introduced while purchaser is storing an electronic Standard on the purchaser's computer system.

No Text on This Page

[ULNORM.COM](https://ulnorm.com) : Click to view the full PDF of UL 558 2021

**JANUARY 10, 2012**  
(Title Page Reprinted: October 22, 2021)



**ANSI/UL 558-2021**

1

## **UL 558**

### **Standard for Industrial Trucks, Internal Combustion Engine-Powered**

The first edition was titled the Standard for LP-Gas Industrial Trucks.

First Edition – September, 1958  
Second Edition – September, 1961  
Third Edition – July, 1970  
Fourth Edition – April, 1972  
Fifth Edition – November, 1977  
Sixth Edition – November, 1979  
Seventh Edition – June, 1984  
Eighth Edition – August, 1991  
Ninth Edition – June, 1996

#### **Tenth Edition**

**January 10, 2012**

This ANSI/UL Standard for Safety consists of the Tenth Edition including revisions through October 22, 2021.

The most recent designation of ANSI/UL 558 as an American National Standard (ANSI) occurred on October 22, 2021. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at <https://csds.ul.com>.

UL's Standards for Safety are copyrighted by UL. Neither a printed nor electronic copy of a Standard should be altered in any way. All of UL's Standards and all copyrights, ownerships, and rights regarding those Standards shall remain the sole and exclusive property of UL.

**COPYRIGHT © 2021 UNDERWRITERS LABORATORIES INC.**

No Text on This Page

[ULNORM.COM](https://ulnorm.com) : Click to view the full PDF of UL 558 2021

## CONTENTS

### INTRODUCTION

1	Scope .....	7
2	Components .....	7
3	Units of Measurement .....	7
4	Undated References .....	8
5	Terminology .....	8
6	Reference Standards .....	8
7	Samples .....	8

### CONSTRUCTION

#### TYPES G, D, LP, AND CN

8	Electrical Systems .....	8
9	Exhaust Systems .....	9
10	Fuel Systems – Gasoline and Diesel .....	10
	10.1 Tanks and pumps .....	10
	10.2 Fuel lines, tubing, and fittings .....	10
	10.3 Nonmetallic parts .....	11
	10.4 Corrosion resistance .....	12
	10.5 Carburetors and backfire preventers .....	12
	10.6 Diesel Exhaust Fluid (DEF) .....	13
11	Fuel Systems – LP & CN-Gas .....	13
	11.1 General .....	13
	11.2 Fuel containers .....	14
	11.2A LP Gas .....	14
	11.3 Fuel lines and fittings .....	16
	11.3A CN Gas .....	16
	11.5 Vaporizers .....	16
	11.6 Safety-control and -relief devices .....	16
	11.7 Nonmetallic parts .....	17
	11.8 Corrosion resistance .....	17
12	Air Conditioning and Heating Systems .....	17

#### TYPES GS, DS, LPS, AND CNS

13	Electrical Systems .....	17
14	Exhaust Systems .....	18
15	Fuel Systems – Gasoline and Diesel .....	19

#### TYPES G/LP, G/CN, GS/LPS, AND GS/CNS

16	General .....	19
17	Fuel System .....	19
	17.1 General .....	19
	17.2 Gasoline and LP-gas components .....	20
	17.3 LP and CN-gas fuel system .....	20
	17.4 Fuel changeover – gasoline carburetor and LP or CN air valve .....	20
	17.5 Fuel changeover – gasoline fuel injection and LP or CN air valve .....	20
	17.6 Fuel changeover – gasoline fuel injection and electronically controlled LP or CN air valve .....	21

17.7 Fuel changeover – gasoline and LP fuel injection .....	21
---	----

## TYPE DY

18 Electrical Systems .....	21
19 Exhaust Systems .....	21
20 Fuel Systems .....	22
21 Temperature Limitations.....	22
22 Temperature Cutoffs .....	22

## PERFORMANCE – ALL TYPES

23 Temperature Tests.....	23
23.1 General.....	23
23.2 Fork and platform trucks.....	23
23.3 Load-carrying trucks .....	24
24 Fuel-Consumption Test.....	24
25 Exhaust System Test – Type G, GS, DS, LP, CN, LPS, CNS, G/LP, G/CN, GS/LPS, and GS/CNS .....	24
25.1 General.....	24
25.2 Types G, LP, and G/LP .....	25
25.3 Types GS, DS, LPS, GS/LPS and DY.....	25
26 LP-Gas Container Bracket Load Test – Types LP, LPS, G/LP, and GS/LPS .....	26

## AUTOMOTIVE-TYPE COMPONENTS

### CONSTRUCTION

27 Electrically Operated Fuel Pumps.....	27
28 Fill and Vent Fittings – Self-Closing Type – Types GS, DS, GS/LPS, and GS/CNS.....	28
29 Manual-Disconnect Switches.....	28
30 Changeover Switch – Dual Fuel.....	30

### PERFORMANCE

31 Vibration Tests.....	30
31.1 Electric fuel pumps .....	30
31.2 Mechanical-disconnect switches .....	30
31.3 Fuel filters .....	31
31.4 Test method .....	31
31.5 Metallic tube fitting vibration test .....	31
32 Endurance Tests .....	31
32.1 Electric fuel pumps .....	31
32.2 Mechanical disconnect switches .....	32
32.3 Fill and vent fittings .....	32
33 Dielectric Voltage-Withstand Test .....	32
34 10-Day Moist Ammonia-Air Stress Cracking Test .....	32
35 Explosion Tests .....	33
36 Hydrostatic-Strength Test.....	34
37 Tube-Fitting Pull Test.....	34
38 Marking-Plate-Adhesion Tests.....	35
38.1 General.....	35
38.2 Oven aging test .....	35
38.3 Immersion test.....	35
38.4 Standard atmosphere test .....	36

39	Backfire Deflector Element Test.....	36
----	--------------------------------------	----

## MANUFACTURING AND PRODUCTION TESTS

40	General .....	36
41	Industrial Trucks, Types LP, CN, LPS, CNS, G/LP, G/CN, GS/LPS and GS/CNS .....	36
42	Industrial Trucks, Type DY .....	36

## MARKING

43	Details.....	36
----	--------------	----

## ELECTRICAL ACCESSORIES FOR FIELD INSTALLATION BY QUALIFIED PERSONNEL

44	Construction .....	38
45	Marking .....	38

## SUPPLEMENT SA – NONMETALLIC MATERIALS USED IN INDUSTRIAL TRUCK ENGINE COMPARTMENTS

### GENERAL

SA1	Scope .....	39
-----	-------------	----

### FLAMMABILITY TESTS

SA2	Test Procedure .....	39
SA3	Vertical Burning Test for Classifying Materials V-0 or V-1.....	39
SA4	Horizontal Burning Test for Classifying Materials HF-1 .....	40
SA5	3/4-Inch Flame Test .....	40

## SUPPLEMENT SB – INTERNAL COMBUSTION ENGINE-POWERED INDUSTRIAL/COMMERCIAL FLOOR CLEANING MACHINES

### GENERAL

SB1	Scope .....	41
SB2	Application of Requirements .....	41

### PERFORMANCE

SB3	Temperature Test.....	41
SB4	Operation Test For Push Type Floor Cleaners .....	41
SB5	Fuel-Consumption Test .....	41
SB6	Overfill Test .....	41
SB7	Nonmetallic Fuel Tanks .....	42
	SB7.1 Internal pressure resistance test.....	42
	SB7.2 Impact test.....	42

## SUPPLEMENT SC – TEST FLUIDS

SC1	Ethanol test fluids .....	43
SC2	Biodiesel Test Fluids .....	43

**APPENDIX A**

Standards for Components .....45

*ULNORM.COM : Click to view the full PDF of UL 558 2021*