

SEMI C38-0212

GUIDE FOR PHOSPHORUS OXYCHLORIDE

This Standard was technically approved by the Liquid Chemicals Global Technical Committee. This edition was approved for publication by the global Audits and Reviews Subcommittee on December 24, 2011. Available at www.semiviews.org and www.semi.org in February 2012; originally published in 1991; previously published March 2006.

NOTICE: This Standard or Safety Guideline has an Inactive Status because the conditions to maintain Current Status have not been met. Inactive Standards or Safety Guidelines are available from SEMI and continue to be valid for use.

1 Purpose

1.1 The purpose of this Standard is to provide a guide for a grade of phosphorus oxychloride for which a need has been identified.

2 Scope

2.1 This Standard lists the proposed impurity limits of phosphorus oxychloride for a grade used in the semiconductor industry.

NOTICE: SEMI Standards and Safety Guidelines do not purport to address all safety issues associated with their use. It is the responsibility of the users of the Documents to establish appropriate safety and health practices, and determine the applicability of regulatory or other limitations prior to use.

3 Limitations

3.1 None.

4 Referenced Standards and Documents

4.1 SEMI Standards and Safety Guidelines

SEMI C1 — Guide for the Analysis of Liquid Chemicals

NOTICE: Unless otherwise indicated, all documents cited shall be the latest published versions.

5 Terminology

5.1 None.

6 Properties

Table 1 Properties of Phosphorus Oxychloride

Molecular Formula	POCl ₃
Molecular Weight	153.3
CAS Number	10025-87-3

7 Suggested Values

7.1 The suggested values for phosphorus oxychloride for Tier A are listed in Table 2.

8 Grade 1 Procedures

8.1 This section does not apply to this chemical.

9 Grade 2 Procedures

9.1 This section does not apply to this chemical.

10 Grade 3 Procedures

10.1 This section does not apply to this chemical.

11 Grade 4 Procedures

11.1 This section does not apply to this chemical.

12 Grade 5 Procedures

12.1 This section does not apply to this chemical.

13 Tier A Procedures

13.1 Standardized test methods are being developed for all parameters at the purity levels indicated. Until standardized test methods are published, test methodology shall be determined by user and producer. A test method is considered valid if it complies with SEMI C1 requirements for method validation.

14 Tier B Procedures

14.1 This section does not apply to this chemical.

15 Tier C Procedures

15.1 This section does not apply to this chemical.

16 Tier D Procedures

16.1 This section does not apply to this chemical.

Table 2 Impurity Limits and Other Suggested Values for Phosphorus Oxychloride

<i>Previous SEMI Reference #</i>	<i>SEMI C7.12-91</i>
	<i>Tier A</i>
	<i>(Guide)</i>
Assay	99.9% min.
Color (APHA)	5 max.
Hydroxyl	0.1 absorbance units ^{#1}
Aluminum (Al)	10 ppb max.
Antimony (Sb)	10 ppb max.
Arsenic (As)	10 ppb max.
Barium (Ba)	10 ppb max.
Boron (B)	10 ppb max.
Cadmium (Cd)	10 ppb max.
Calcium (Ca)	10 ppb max.
Chromium (Cr)	10 ppb max.
Copper (Cu)	10 ppb max.
Iron (Fe)	10 ppb max.
Lead (Pb)	10 ppb max.
Lithium (Li)	10 ppb max.
Magnesium (Mg)	10 ppb max.
Manganese (Mn)	10 ppb max.
Nickel (Ni)	10 ppb max.