

# SURFACE VEHICLE INFORMATION REPORT

**SAE** J1081

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## Potential Standard Steels

**Foreword**—This Document has also changed to comply with the new SAE Technical Standards Board Format. Scope is Section 1, References were added as Section 2.

- 1. Scope**—This SAE Information Report provides a uniform means of designating wrought steels during a period of usage prior to the time they meet the requirements for SAE standard steel designation. The numbers consist of the prefix PS<sup>1</sup> followed by a sequential number starting with 1. A number once assigned is never assigned to any other composition.

A PS number may be obtained for steel composition by submitting a written request to SAE Staff, indicating the chemical composition and other pertinent characteristics of the material. If the request is approved according to established procedures, SAE Staff will assign a PS number to the grade. This number will remain in effect until the grade meets the requirements for an SAE standard steel or the grade is discontinued according to established procedures.

Table 1 is a listing of the chemical composition limits of potential standard steels which were considered active on the date of the last survey prior to the date of this report. These ladle limits are subject to standard variations for check analysis as given in SAE J409.

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1. Previously noted as EX.

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**TABLE 1—SAE POTENTIAL STANDARD STEEL COMPOSITIONS  
LADLE CHEMICAL COMPOSITION LIMITS, % BY WEIGHT**

PS No. <sup>(1)</sup>	C	Mn	P, max	S, max	Si	Ni	Cr	Mo	B
PS 10	0.19–0.24	0.95–1.25	0.035	0.040	0.15–0.35	0.20–0.40	0.25–0.40	0.05–0.10	—
PS 16	0.20–0.25	0.90–1.20	0.035	0.040	0.15–0.35	—	0.40–0.60	0.13–0.20	—
PS 17	0.23–0.28	0.90–1.20	0.035	0.040	0.15–0.35	—	0.40–0.60	0.13–0.20	—
PS 18	0.25–0.30	0.90–1.20	0.035	0.040	0.15–0.35	—	0.40–0.60	0.13–0.20	—
PS 19	0.18–0.23	0.90–1.20	0.035	0.040	0.15–0.35	—	0.40–0.60	0.08–0.15	0.0005–0.003
PS 20	0.13–0.18	0.90–1.20	0.035	0.040	0.15–0.35	—	0.40–0.60	0.13–0.20	—
PS 21	0.15–0.20	0.90–1.20	0.035	0.040	0.15–0.35	—	0.40–0.60	0.13–0.20	—
PS 31	0.15–0.20	0.70–0.90	0.035	0.040	0.15–0.35	0.70–1.00	0.45–0.65	0.45–0.60	—
PS 32	0.18–0.23	0.70–0.90	0.035	0.040	0.15–0.35	0.70–1.00	0.45–0.65	0.45–0.60	—
PS 33 <sup>(2)</sup>	0.17–0.24	0.85–1.25	0.035	0.040	0.15–0.35	0.20 min	0.20 min	0.05 min	—
PS 34	0.28–0.33	0.90–1.20	0.035	0.040	0.15–0.35	—	0.40–0.60	0.13–0.20	—
PS 36	0.38–0.43	0.90–1.20	0.035	0.040	0.15–0.35	—	0.45–0.65	0.13–0.20	—
PS 38	0.43–0.48	0.90–1.20	0.035	0.040	0.15–0.35	—	0.45–0.65	0.13–0.20	—
PS 39	0.48–0.53	0.90–1.20	0.035	0.040	0.15–0.35	—	0.45–0.65	0.13–0.20	—
PS 40	0.51–0.59	0.90–1.20	0.035	0.040	0.15–0.35	—	0.45–0.65	0.13–0.20	—
PS 54	0.19–0.25	0.70–1.05	0.035	0.040	0.15–0.35	—	0.40–0.70	0.05 min	—
PS 55	0.15–0.20	0.70–1.00	0.035	0.040	0.15–0.35	1.65–2.00	0.45–0.65	0.65–0.80	—
PS 56	0.080–0.13	0.70–1.00	0.035	0.040	0.15–0.35	1.65–2.00	0.45–0.65	0.65–0.80	—
PS 57	0.08 max	1.25 max	0.040	0.15–0.35	1.00 max	—	17.00–19.00	1.75–2.25	—
PS 58	0.16–0.21	1.00–1.30	0.035	0.040	0.15–0.35	—	0.45–0.65	—	—
PS 59	0.18–0.23	1.00–1.30	0.035	0.040	0.15–0.35	—	0.70–0.90	—	—
PS 61	0.23–0.28	1.00–1.30	0.035	0.040	0.15–0.35	—	0.70–0.90	—	—
PS 63	0.31–0.38	0.75–1.10	0.035	0.040	0.15–0.35	—	0.45–0.65	—	0.0005–0.003
PS 64	0.16–0.21	1.00–1.30	0.035	0.040	0.15–0.35	—	0.70–0.90	—	—
PS 65	0.21–0.26	1.00–1.30	0.035	0.040	0.15–0.35	—	0.70–0.90	—	—
PS 66 <sup>(3)</sup>	0.16–0.21	0.40–0.70	0.035	0.040	0.15–0.35	1.65–2.00	0.45–0.75	0.08–0.15	—
PS 67	0.42–0.49	0.80–1.20	0.035	0.040	0.15–0.35	—	0.85–1.20	0.25–0.35	—
PS 68 <sup>(4)</sup>	0.15 max	0.85–1.15	0.04–0.09	0.26–0.35					

1. Some PS steels may be supplied to a hardenability requirement.
2. Supplied to a hardenability requirement of 15 HRC points within the range of HRC 23/43 at J4, subject to agreement between producer and user.
3. PS 66 has vanadium content 0.10–0.15.
4. PS 68 has Sn content 0.04–0.08

## 2. References

**2.1 Applicable Publication**—The following publication forms a part of the specification to the extent specified herein. Unless otherwise indicated, the latest revision of SAE publications shall apply.

2.1.1 SAE PUBLICATION—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J409 FEB95—Product Analysis—Permissible Variations from Specified Chemical analysis of a Heat or Cast of Steel

3. **Notes**

- 3.1 **Marginal Indicia**—The change bar (I) located in the left margin is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. An (R) symbol to the left of the document title indicates a complete revision of the report.

PREPARED BY THE SAE ISTC DIVISION 1—CARBON AND ALLOY STEELS  
AND SPONSORED BY THE SAE IRON AND STEEL TECHNICAL COMMITTEE

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APPENDIX A

DESIGNATION AND NUMBERING OF POTENTIAL STANDARD STEELS

- A.1 Scope**—This Appendix establishes a system for designating and numbering compositions for steel products during a period of limited use in which technical and commercial desirability is evaluated.
- A.1.1 Designation and Numbering**—Such materials shall be designated by the prefix PS and numbered by assigning a sequential, non-significant number beginning with 1 in the order of approval for listing.
- A.1.1.1 Application for listing may be made by any person, acting in his own behalf or for his company or association by written application to the SAE technical staff listing the range of chemical composition and other pertinent characteristics of the proposed material. This request shall be forwarded to the Chairman of the appropriate Division of ISTC for action.
- A.1.1.2 ASSIGNMENT OF NUMBER—If the Division Chairman approves, he shall inform the appropriate member of the SAE Technical Staff who will assign the number, add the material to the list, and inform the applicant of the number assigned.
- A.1.2 Publication**—The current numbers, their range of chemical composition, and other pertinent characteristics, shall be published yearly in the SAE Handbook in SAE J1081. Publication of interim bulletins on newly listed numbers may be authorized by the ISTC Executive Committee.
- A.1.3 Discontinuance**—A material may be removed from the list by any of the following:
- A.1.3.1 Adoption of the material as an SAE standard steel and assignment of a permanent number.
- A.1.3.2 Formal action to delist by the cognizant Division.
- A.1.3.2.1 Every two years each Division shall determine the status of the steels within its jurisdiction and delete those which an ISTC ballot shows to be of insufficient interest to warrant further consideration.
- A.1.3.3 A request to delist by the applicant who originally requested listing, followed by action prescribed in A.3.2.
- A.1.4** Reassignment of a number once assigned is not permitted. If the material to which it was originally assigned is relisted, it shall be relisted with its original number.