Potential Standard Steels—

SAE J1081 NOV83

SAE Information Report
Third Revision November 1983

THIS IS A PREPRINT WHICH IS SUBJECT TO REVISIONS AND CORRECTIONS. THE FINAL VERSION WILL APPEAR IN THE 1985 EDITION OF THE SAE HANDBOOK.

PREPRINT

POTENTIAL STANDARD STEELS—SAE J1081
NOV83

SAE Information Report

Report of the Iron and Steel Technical Committee, approved April 1974, third revision, ISTC Division 1, November 1983.

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 ϕ of the prefix PS[1] followed by a sequential number starting with 1. A number once assigned is never assigned to any other composition.

ϕ 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 ϕ to the grade. This number will remain in effect until the grade meets ϕ 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 stan- ϕ dard 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.

ϕ [1] Previously noted as EX.

ϕ **ϕ TABLE 1—SAE POTENTIAL STANDARD STEEL COMPOSITIONS**

Ladle Chemical Composition Limits, % by Weight

PS No.[a]	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 15	0.18–0.23	0.90–1.20	0.035	0.040	0.15–0.35	—	0.40–0.60	0.13–0.20	—
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 24	0.18–0.23	0.75–1.00	0.035	0.040	0.15–0.35	—	0.45–0.65	0.20–0.30	—
PS 30	0.13–0.18	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 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[b]	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[c]	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	—

ϕ [a] Some PS steels may be supplied to a hardenability requirement.
ϕ [b] 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.
ϕ [c] PS 66 has vanadium content 0.10–0.15.

ϕ APPENDIX A
DESIGNATION AND NUMBERING OF POTENTIAL STANDARD STEELS

A. Scope—This Appendix establishes a system for designating and num- ϕ bering compositions for steel products during a period of limited use in which technical and commercial desirability is evaluated.

A.1 Designation and Numbering—Such materials shall be desig- ϕ nated 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 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.1.2 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.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.3 Discontinuance—A material may be removed from the list by any of the following:

A.3.1 Adoption of the material as an SAE standard steel and assignment of a permanent number.

A.3.2 Formal action to delist by the cognizant Division.

A.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.3.3 A request to delist by the applicant who originally requested listing, followed by action prescribed in A.3.2.

A.4 Reassignment of a number once assigned is not permitted. If ϕ the material to which it was originally assigned is relisted, it shall be relisted with its original number.

The ϕ symbol is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. If the symbol is next to the report title, it indicates a complete revision of the report.