SURFACE VEHICLE INFORMATION REPORT

J1081™ JUN2023

Issued 1974-04
Revised 2000-11
Stabilized 2023-06

Superseding J1081 NOV2000

Potential Standard Steels

RATIONALE

The technology in this specification is stable and no further technical revisions are applicable at this time.

STABILIZED NOTICE

This document has been declared “STABILIZED” by SAE Metals Technical Committee and will no longer be subjected to periodic reviews for currency. Users are responsible for verifying references and continued suitability of technical requirements. Newer technology may exist.

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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[1] 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.

1. Previously noted as EX.

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

PS No.[1]	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[2]	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[3]	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[4]	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 (l) 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.

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AND SPONSORED BY THE SAE IRON AND STEEL TECHNICAL COMMITTEE