cold-short, *adj.*

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**Forms:**  1600s **colsar**, **col-**, **cole-shire**, **coleshore**, **coldshare**, **coldshore**, 1600s–1700s ... [**(Show More)**](https://www.oed.com/view/Entry/36125)

**Frequency (in current use):**  [Show frequency band information](https://www.oed.com/frequencybandinformation/2)

**Etymology:**This, and the parallel [red-short *n.* and *adj.*](https://www.oed.com/view/Entry/160481#eid26403839) (also, in later use, *hot-short* ... [**(Show More)**](https://www.oed.com/view/Entry/36125)

**Thesaurus »**

**Categories »**

  Said of iron: Brittle in its cold state.

1601   P. Holland tr. Pliny *Hist. World* II. 514   In another [place] the mettall is brittle and short [*margin* Which our smiths cal Colsar yron].

1637   Vernatt & Whitmore *Specif. Patent 113*   Good and merchantable tough iron and colshire iron [*elsewhere* coleshire, *bis*].

1665   D. Dudley *Mettallum Martis* sig. D6   Nay the Plough-man often breaks his Share point off if it be made of coldshare Iron.

1674   *Philos. Trans.* (Royal Soc.) (1693) **17** 696   Some makes Coldshire-Iron, that is, such as is brittle when it is cold; another sort makes Redshire.

1681   A. Yarranton *England's Improvem.: Pt. II* 155   The Colshore-Iron which is made in Staffordshire.

1730   *Beware of Bubbles* 2   Mr. Wood in his paper says there are four sorts of Iron viz. Redshort, Coldshort, Best-tough, and Ordinary tough.

1773   R. Jesson & J. Wright *Specif. of Patent 1054* 2   When the metal appears to be red short or coal short.

1794   S. Williams *Nat. & Civil Hist. Vermont* 316   The iron is mostly of the coldshire kind.

1795   R. Pearson in *Philos. Trans.* (Royal Soc.) **85** 342   The presence of phosphoric acid has been shown to be the occasion of the variety of iron, named cold short; which is brittle when cold, but not when ignited.

1864   J. Percy *Metall.: Iron & Steel* 64   Phosphorus even in small quantity has a decided effect upon..iron at ordinary temperatures, rendering it *cold-short*, i.e. brittle while cold.

*figurative.*

1832   T. Carlyle in *Edinb. Rev.* July 347   His feelings have been hammered till they are cold-short.

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**Derivatives**

red-short, *n.* and *adj.*

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**Pronunciation:**

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[U.S.](https://public.oed.com/how-to-use-the-oed/key-to-pronunciation/key-to-pronunciation-US-english/) Hear pronunciation/ˈˌrɛdˈʃɔrt/

**Frequency (in current use):**  [Show frequency band information](https://www.oed.com/frequencybandinformation/3)

**Origin:**Formed within English, by compounding; perhaps modelled on a Danish lexical item, or perhaps modelled on a Swedish lexical item. **Etymons:** [red *adj.*](https://www.oed.com/view/Entry/160134#eid26312942), [short *adj.*](https://www.oed.com/view/Entry/178579#eid22999433)

**Etymology:**< [red *adj.*](https://www.oed.com/view/Entry/160134#eid26312942) + [short *adj.*](https://www.oed.com/view/Entry/178579#eid22999433) (see [short *adj.* 21](https://www.oed.com/view/Entry/178579#eid23003415)), perhaps after the adjectives Danish ... [**(Show More)**](https://www.oed.com/view/Entry/160481)

*Founding*.

 **A.** *n.*

**Thesaurus »**

**Categories »**

  Iron or steel that is brittle when red-hot (see sense [B.](https://www.oed.com/view/Entry/160481#eid26403866)); the defect represented by this. Now *rare*.

1730   *Beware of Bubbles* 2   Mr. Wood in his paper says there are four sorts of Iron viz. Redshort, Coldshort, Best-tough, and Ordinary tough.

1795   *Philos. Trans.* (Royal Soc.) **85** 342   There is another variety called red short, which is malleable when cold, but brittle when ignited.

1971   W. K. V. Gale *Iron & Steel Industry: Dict. Terms* 167   *Red short* (*hot short*), a fault in wrought iron caused by excess of sulphur, which causes the iron to be brittle when hot and thus difficult to work...These terms are becoming obsolete but are still sometimes applied to steel.

[**(Hide quotations)**](https://www.oed.com/view/Entry/160481)

 **B.** *adj.*

**Thesaurus »**

**Categories »**

  Designating iron and steel that is brittle when red-hot, typically because of an excess of sulphur in the metal. Opposed to *cold-short*. Cf. [hot short *adj.*](https://www.oed.com/view/Entry/88822#eid1335852)

1773   R. Jesson & J. Wright *Specif. of Patent 1054* 2   When the metal appears to be red short or coal short.

1784   J. Dalrymple *Addr. & Proposals* 5   By the mode of working now in practice, red short pig produces red short bars, and cold short pig produces cold short bars.

1824   *Mechanic's Mag.* No. 52. 383   Notwithstanding the superior quality of this iron, the bars made from it were..so completely red-short, as to drop asunder.

1857   *Mining Mag.* Jan. 119   It is maintained, with some reason, that the boiled iron is more inclined to the red-short quality than iron otherwise prepared.

1884   W. H. Greenwood *Steel & Iron* x. 208   Antimony..produces when present in small quantities in malleable iron, a metal which is both cold-short and red-short.

1922   R. A. Hadfield *Metall. Iron & Steel* iii. 13   Sulphur, on the other hand, causes the metal to be ‘red short’, i.e. brittle or liable to crack between red heat and welding temperature.

1964   W. Steeds *Engin. Materials, Machine Tools & Processes* (ed. 4) ii. 42   The heat treatment will determine whether the steel will be red short or not.

2004   J. Bezís-Selfa *Forging Amer.* i. 37   Often forgemen had to work with pig iron that they called ‘red-short’..or ‘cold short’.

[**(Hide quotations)**](https://www.oed.com/view/Entry/160481)

**Derivatives**

**Thesaurus »**

**Categories »**

  **ˌred-ˈshortness**  *n.* the quality or state of being red-short.

1848   *Minutes Proc. Inst. Civil Engineers* **7** 12   His investigations..into the causes of red-shortness and cold-shortness in bar-iron may be particularly mentioned.

1874   J. A. Phillips *Elem. Metall.* (1887) 323   The exact cause of red-shortness in welded iron is not always very clear.

1924   *Jrnl. Iron & Steel Inst.* **110** 427   In order to avoid red-shortness not more than 0.01 per cent sulphur should be present.

1986   *Rail Internat.* July 37/1   In the case of the steel produced in BOF converters, low copper contents are favourable because the phenomenon of red-shortness is eliminated in this way during heating.

[**(Hide quotations)**](https://www.oed.com/view/Entry/160481)

hot short, *adj.*

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**Pronunciation:**

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[U.S.](https://public.oed.com/how-to-use-the-oed/key-to-pronunciation/key-to-pronunciation-US-english/) Hear pronunciation/ˈhɑt ˈʃɔrt/

**Frequency (in current use):**  [Show frequency band information](https://www.oed.com/frequencybandinformation/2)

**Origin:**Formed within English, by compounding. **Etymons:** [hot *adj.*](https://www.oed.com/view/Entry/88782#eid1323358), [short *adj.*](https://www.oed.com/view/Entry/178579#eid22999433)

**Etymology:**< [hot *adj.*](https://www.oed.com/view/Entry/88782#eid1323358) + [short *adj.*](https://www.oed.com/view/Entry/178579#eid22999433) (see [short *adj.* 21](https://www.oed.com/view/Entry/178579#eid23003415)), after [red-short *adj.*](https://www.oed.com/view/Entry/160481#eid26403864), [cold-short *adj.*](https://www.oed.com/view/Entry/36125#eid8869011)... [**(Show More)**](https://www.oed.com/view/Entry/88822?redirectedFrom=hot-short)

*Metallurgy*.

**Thesaurus »**

**Categories »**

  Of iron: brittle when hot.

1788   W. Nicholson tr. A.-F. de Fourcroy *Elements Nat. Hist. & Chem.* III. 231   Brittle iron..is distinguished into hot short iron, and cold short iron [Fr. *on le distingue en fer cassant à chaud, & fer cassant à froid*].

1798   *Philos. Mag.* **2** 160   Hot short iron is possessed of an extreme degree of fusibility.

1810   *Philos. Trans.* (Royal Soc.) **100** 66   Cast iron from a particular spot will make only cold short iron; whilst, from another spot, it will make hot short.

1877   M. Reynolds *Locom. Engine Driving* (ed. 5) iv. 230   Cracks on the edges of bars, sign of hot-short iron.

1949   C. J. Smithells *Metals Ref. Bk.* 596   Nearly all alloys can be sand cast, including relatively hot short materials.

1964   *Arc Welding of Aluminium* (Aluminium Federation Information Bull. 19) 10   Certain alloys..have a tendency to hot-tearing or hot-short cracking at temperatures in the solidification range.

1996   *Jrnl. Field Archaeol.* **23** 482/2   At tin concentrations above 8%, bronze becomes brittle (hot short).

[**(Hide quotations)**](https://www.oed.com/view/Entry/88822?redirectedFrom=hot-short)

**Derivatives**

**Thesaurus »**

**Categories »**

  **ˌhot-ˈshortness**  *n.* the property or state of being hot short.

1840   W. R. Johnson in *Communication transmitting Rep. Geol. Surv. State* (N.Y. State Assembly: No. 50) 307   The foregoing trials..fully established the freedom of this iron from the defects known either as hot shortness or cold shortness.

1890   H. M. Howe *Metall. of Steel* I. iv. 42/1   Manganese..by bodily removing sulphur from cast-iron and probably from steel,..prevents hot-shortness, both red and yellow.

1961   S. A. Hiscock *Lead & Lead Alloys for Cable Sheathing* vii. 221   By subtracting 20° C. from the ‘cracking-temperature’..some indication will be obtained of the extrusion temperature which must not be exceeded if ‘hot-shortness’..is to be avoided.

2001   R. W. Cahn *Coming of Materials Sci.* v. 190   That heat-treatment involving hot or cold work coupled with annealing can lead to benefits in some instances and to catastrophes such as ‘hot shortness’ in others.

[**(Hide quotati**](https://www.oed.com/view/Entry/88822?redirectedFrom=hot-short)