



## ***Rocky Enterprise Linux 9.2 Manual Pages on command 'erfc.3'***

**C:\>man erfc.3**

ERFC(3)                      Linux Programmer's Manual                      ERFC(3)

### NAME

erfc, erfcf, erfcl - complementary error function

### SYNOPSIS

```
#include <math.h>
```

```
double erfc(double x);
```

```
float erfcf(float x);
```

```
long double erfcl(long double x);
```

Link with -lm.

Feature Test Macro Requirements for glibc (see feature\_test\_macros(7)):

erfc():

```
_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L || _XOPEN_SOURCE
```

```
|| /* Since glibc 2.19: */ _DEFAULT_SOURCE
```

```
|| /* Glibc versions <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
```

erfcf(), erfcl():

```
_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L
```

```
|| /* Since glibc 2.19: */ _DEFAULT_SOURCE
```

```
|| /* Glibc versions <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
```

### DESCRIPTION

These functions return the complementary error function of x, that is,  $1.0 - \operatorname{erf}(x)$ .

erf(x).

### RETURN VALUE

On success, these functions return the complementary error function of x, a value in the range [0,2].

If x is a NaN, a NaN is returned.

If x is +0 or -0, 1 is returned.

If x is positive infinity, +0 is returned.

If x is negative infinity, +2 is returned.

If the function result underflows and produces an unrepresentable value, the return value is 0.0.

If the function result underflows but produces a representable (i.e., subnormal) value, that value is returned, and a range error occurs.

## ERRORS

See `math_error(7)` for information on how to determine whether an error has occurred when calling these functions.

The following errors can occur:

Range error: result underflow (result is subnormal)

An underflow floating-point exception (FE\_UNDERFLOW) is raised.

These functions do not set `errno`.

## ATTRIBUTES

For an explanation of the terms used in this section, see `attributes(7)`.

??

?Interface            ? Attribute   ? Value   ?

??

?`erfc()`, `erfcf()`, `erfcl()` ? Thread safety ? MT-Safe ?

??

## CONFORMING TO

C99, POSIX.1-2001, POSIX.1-2008.

The variant returning double also conforms to SVr4, 4.3BSD.

## NOTES

The `erfc()`, `erfcf()`, and `erfcl()` functions are provided to avoid the loss of accuracy that would occur for the calculation  $1-\text{erf}(x)$  for large values of  $x$  (for which the value of  $\text{erf}(x)$  approaches 1).

## SEE ALSO

`cerf(3)`, `erf(3)`, `exp(3)`

## COLOPHON

This page is part of release 5.05 of the Linux man-pages project. A description of the project, information about reporting bugs, and the latest version of this page, can be found at <https://www.kernel.org/doc/man-pages/>.

GNU

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