NAG Library Function Document

nag_real_safe_small_number (X02AMC)

1 Purpose

nag_real_safe_small_number (X02AMC) returns the **safe range** of floating-point arithmetic.

2 Specification

```
#include <nag.h>
#include <nagx02.h>
double nag_real_safe_small_number
```

3 Description

nag_real_safe_small_number (X02AMC) is a constant defined in the C Header file.

nag_real_safe_small_number (X02AMC) is defined to be the smallest positive model number z such that for any x in the range $[z, 1/z]$ the following can be computed without undue loss of accuracy, overflow, underflow or other error:

$-x$

$1/x$

$-1/x$

$\sqrt{x}$

$\log(x)$

$\exp(\log(x))$

$y^{(\log(x)/\log(y))}$ for any y

4 References

None.

5 Arguments

None.

6 Error Indicators and Warnings

None.

7 Accuracy

None.

8 Parallelism and Performance

nag_real_safe_small_number (X02AMC) is not threaded in any implementation.

9 Further Comments

None.

10 Example

None.