

# Package ‘CompLognormal’

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**Type** Package

**Title** Functions for actuarial scientists

**Version** 3.0

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**Depends** R (>= 2.15.0), numDeriv

**Description** Computes the probability density function, cumulative distribution function, quantile function, random numbers of any composite model based on the lognormal distribution.

**License** GPL (>= 2)

**NeedsCompilation** no

**Repository** CRAN

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CompLognormal-package *Computes functions for actuarial use*

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## Description

Computes the probability density function, cumulative distribution function, quantile function, random numbers of any composite model based on the lognormal distribution

**Details**

Package: CompLognormal  
 Type: Package  
 Version: 3.0  
 Date: 2013-8-4  
 License: GPL(>=2)

probability density function, cumulative distribution function, quantile function, random numbers

### Author(s)

Saralees Nadarajah

Maintainer: Saralees Nadarajah <Saralees.Nadarajah@manchester.ac.uk>

### References

S. Nadarajah, S. A. A. Bakar, CompLognormal: An R Package for Composite Lognormal Distributions, submitted

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dcomplnorm

*Composite lognormal pdf*

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### Description

Computes the pdf of the composite lognormal distribution

### Usage

```
dcomplnorm(x, spec, sigma = 1, theta = 1, log=FALSE, ...)
```

### Arguments

x	scale or vector of positive values at which the pdf needs to be computed
sigma	the value of sigma parameter of the lognormal distribution, must be positive
theta	the value of theta parameter, the cutoff point, must be positive
spec	the specific distribution with which the lognormal distribution should be composed with
log	if TRUE then log(pdf) are returned
...	other parameters

### Value

An object of the same length as x, giving the pdf values computed at x

### Author(s)

Saralees Nadarajah

**References**

S. Nadarajah, S. A. A. Bakar, CompLognormal: An R Package for Composite Lognormal Distributions, submitted

**Examples**

```
x=runif(10,min=0,max=1)
y=dcomplnorm(x,"exp",rate=1)
```

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pcomplnorm

*Composite lognormal cdf*


---

**Description**

Computes the cdf of the composite lognormal distribution

**Usage**

```
pcomplnorm(x, spec, sigma = 1, theta = 1, log.p=FALSE, lower.tail=TRUE, ...)
```

**Arguments**

x	scale or vector of positive values at which the cdf needs to be computed
sigma	the value of sigma parameter of the lognormal distribution, must be positive
theta	the value of theta parameter, the cutoff point, must be positive
spec	the specific distribution with which the lognormal distribution should be composited with
log.p	if TRUE then log(cdf) are returned
lower.tail	if TRUE then cdf are returned else 1-cdf are returned
...	other parameters

**Value**

An object of the same length as x, giving the cdf values computed at x

**Author(s)**

Saralees Nadarajah

**References**

S. Nadarajah, S. A. A. Bakar, CompLognormal: An R Package for Composite Lognormal Distributions, submitted

**Examples**

```
x=runif(10,min=0,max=1)
y=pcomplnorm(x,"exp",rate=1)
```

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qcomplnorm	<i>Composite lognormal quantile</i>
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**Description**

Computes the quantile function of the composite lognormal distribution

**Usage**

```
qcomplnorm(p, spec, sigma = 1, theta = 1, log.p=FALSE, lower.tail=TRUE, ...)
```

**Arguments**

p	scale or vector of probabilities at which the quantile function needs to be computed
sigma	the value of sigma parameter of the lognormal distribution, must be positive
theta	the value of theta parameter, the cutoff point, must be positive
spec	the specific distribution with which the lognormal distribution should be composed with
log.p	if TRUE then quantiles are returned for exp(p)
lower.tail	if TRUE then quantiles are returned for p else quantiles are returned for 1-p
...	other parameters

**Value**

An object of the same length as p, giving the quantile values computed at p

**Author(s)**

Saralees Nadarajah

**References**

S. Nadarajah, S. A. A. Bakar, CompLognormal: An R Package for Composite Lognormal Distributions, submitted

**Examples**

```
p=runif(10,min=0,max=1)
y=qcomplnorm(p,"exp",rate=1)
```

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`rcomplnorm`*Composite lognormal random numbers*

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**Description**

Generates random numbers from the composite lognormal distribution

**Usage**

```
rcomplnorm(n, spec, sigma = 1, theta = 1, ...)
```

**Arguments**

<code>n</code>	number of random numbers to be generated
<code>sigma</code>	the value of sigma parameter of the lognormal distribution, must be positive
<code>theta</code>	the value of theta parameter, the cutoff point, must be positive
<code>spec</code>	the specific distribution with which the lognormal distribution should be composed with
<code>...</code>	other parameters

**Value**

An object of the length `n`, giving the random numbers from the composite lognormal distribution

**Author(s)**

Saralees Nadarajah

**References**

S. Nadarajah, S. A. A. Bakar, CompLognormal: An R Package for Composite Lognormal Distributions, submitted

**Examples**

```
y=rcomplnorm(100,"exp",rate=1)
```

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