

Baldo-Bombaci-Burgio

EoS Submission Details

EoS name	Baldo-Bombaci-Burgio
category	hadronic
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Abstract

This table represents the zero temperature and β -equilibrium EoS by Baldo, Bombaci and Burgio using a BHF calculation [1], interaction Paris + TBF. The inner crust is calculated with SLy4 [2], the outer crust from Baym, Pethick, Sutherland [3]. No compositional information is available.

References to the original work

1. M. Baldo, I. Bombaci and G. F. Burgio, *Astron. Astrophys.* **328** (1997) 274.
2. F. Douchin, P. Haensel, *Astronomy and Astrophysics* **380**, (2001) 151.
3. G. Baym, C. Pethick and P. Sutherland, *Astrophys. J.* **170** (1971) 299.

Nuclear Matter Properties¹

	Quantity	Unit	
n_S	saturation density in symmetric matter	fm^{-3}	0.176
E_0	binding energy per baryon at saturation	MeV	16.01
K	incompressibility	MeV	281
K'	skewness	MeV	0
J	symmetry energy	MeV	0
L	symmetry energy slope parameter	MeV	0
K_{sym}	symmetry incompressibility	MeV	0

Neutron Star Properties¹

	Quantity	Unit	
M_{max}	maximum mass	M_{sun}	1.92
$M_{DU,e}$	mass at DUrca threshold (1/9) w/o μ^-	M_{sun}	1.19
$R_{M_{max}}$	radius at maximum NS mass	km	9.50
$R_{1.4}$	radius at 1.4 M_{sun} NS mass	km	11.13

eos.thermo

eos.thermo and the three grid defining files are ComPOSE standard data files and by definition available. eos.thermo does not necessarily provide all possible data.

```
table dimension      1
table type          1
total number of grid points  84
```

Range and density (#) of the grid parameters:

	Quantity	Unit	min	max	#
T	Temperature	MeV	0	0	1
n_b	Baryon Nr Density	fm^{-3}	7.9240596E-15	0.150000E+01	84
Y_q	Charge Fraction		0	0	1

T, n_b , and Y_q are stored in eos.t, eos.nb, and eos.yq, respectively.

¹0-values indicate, that the corresponding data is not provided.