Buchi 20/40/60 rule for Rotary Evaporators

Optimal Distillation parameters for a rotary evaporator vary according to solvent in use:

1. Set **water bath temperature** to **60°C** – It does not need to be higher!
2. The **cooling water** temperature should be below **20°C**.
3. Adjust the needed **vacuum** for a solvent boiling point of **40°C** according to list below.

Solvent	Formula	Vacuum [mbar] for bp at 40 °C
Acetic acid	$C_2H_4O_2$	44
Acetone	C_3H_6O	556
Acetonitrile	C_2H_3N	226
n-Amylalcohol, n-Pentanol	$C_5H_{12}O$	11
n-Butanol	C_4H_{10}	25
tert-Butanol, 2-Methyl-2-Propanol	$C_4H_{10}O$	130
Butylacetate	$C_6H_{12}O_2$	39
Chlorobenzene	C_6H_5Cl	36
Chloroform	$CHCl_3$	474
Cyclohexane	C_6H_{12}	235
Dichloromethane, Methylene chloride	CH_2Cl_2	atm. press.*
Diethylether	$C_4H_{10}O$	atm. press.*
1,2,-Dichloroethylene (trans)	$C_2H_2Cl_2$	751
Diisopropylether	$C_6H_{14}O$	375
Dioxane	$C_4H_8O_2$	107
Dimethylformamide (DMF)	C_3H_7NO	11
Ethanol	C_2H_6O	175
Ethylacetate	$C_4H_8O_2$	240
Ethylmethylketone	C_4H_8O	243
Heptane	C_7H_{16}	120
Hexane	C_6H_{14}	335
Isopropylalcohol	C_3H_8O	137
Isoamylalcohol, 3-Methyl-1Butanol	$C_5H_{12}O$	14
Methanol	CH_4O	337
Pentane	C_5H_{12}	atm. press.*
n-Propylalcohol	C_3H_8O	67
Pentachloroethane	C_2HCl_5	13
1,1,2,2,-Tetrachloroethane	$C_2H_2Cl_4$	35
1,1,1,-Trichloroethane	$C_2H_3Cl_3$	300
Tetrachloroethylene	C_2Cl_4	53
Tetrachloromethane	CCl_4	271
Tetrahydrofurane (THF)	C_4H_8O	357
Toluene	C_7H_8	77
Trichloroethylene	C_2HCl_3	183
Water	H_2O	72
Xylene	C_8H_{10}	25

~850 mbar recommended

Reference: Buchi: List of Solvents