



Conversion factors of selected nutrients / chemical compounds

Technisches Büro Unterfrauner GmbH
Umseerstraße 39, A-3040 Neulengbach
+43 676 364 10 30
office@bodenoekologie.com
www.bodenoekologie.com

Instruction: Multiply the quantity of the given element / compound by the factor.
The conversion tables were calculated according to molecular weights and published by **TB Unterfrauner GmbH** (2022). No liability is assumed for the correctness of the conversion factors.

Given	Sought	Factor	Given	Sought	Factor
CALCIUM					
Ca	CaO	1.399	CaO	Ca	0.715
Ca	CaCO ₃	2.497	CaCO ₃	Ca	0.400
Ca	CaSO ₄	3.397	CaSO ₄	Ca	0.294
Ca	CaSO ₄ * 2 H ₂ O	4.296	CaSO ₄ * 2 H ₂ O	Ca	0.233
Ca	CaCl ₂	2.769	CaCl ₂	Ca	0.361
Ca	Ca(OH) ₂	1.849	Ca(OH) ₂	Ca	0.541
CaO	CaCO ₃	1.785	CaCO ₃	CaO	0.560
CaO	CaSO ₄	2.428	CaSO ₄	CaO	0.412
CaO	CaCl ₂	1.979	CaCl ₂	CaO	0.505
CaO	Ca(OH) ₂	1.321	Ca(OH) ₂	CaO	0.757

MAGNESIUM					
Mg	MgO	1.658	MgO	Mg	0.603
Mg	MgCO ₃	3.469	MgCO ₃	Mg	0.288
Mg	MgSO ₄	4.952	MgSO ₄	Mg	0.202
Mg	MgCl ₂	3.917	MgCl ₂	Mg	0.255
Mg	Mg(OH) ₂	2.400	Mg(OH) ₂	Mg	0.417
MgO	MgCO ₃	2.092	MgCO ₃	MgO	0.478
MgO	MgSO ₄	2.986	MgSO ₄	MgO	0.335
MgO	MgCl ₂	2.362	MgCl ₂	MgO	0.423
MgO	Mg(OH) ₂	1.447	Mg(OH) ₂	MgO	0.691

POTASSIUM					
K	K ₂ O	1.205	K ₂ O	K	0.830
K	KCl	1.907	KCl	K	0.525
K	K ₂ SO ₄	2.228	K ₂ SO ₄	K	0.449
K ₂ O	KCl	1.583	KCl	K ₂ O	0.632
K ₂ O	K ₂ SO ₄	1.850	K ₂ SO ₄	K ₂ O	0.541

Given	Sought	Factor	Given	Sought	Factor
NITROGEN					
N	CO(NH ₂) ₂	2.144	CO(NH ₂) ₂	N	0.467
N	NO ₃	4.427	NO ₃	N	0.226
N	NH ₃	1.216	NH ₃	N	0.822
N	NH ₄	1.288	NH ₄	N	0.777
N	(NH ₄) ₂ SO ₄	4.717	(NH ₄) ₂ SO ₄	N	0.212
N	NH ₄ NO ₃	2.857	NH ₄ NO ₃	N	0.350
N	Ca(CN) ₂	3.288	Ca(CN) ₂	N	0.304
N	N ₂ O	1.571	N ₂ O	N	0.637

SULFUR					
S	SO ₂	1.998	SO ₂	S	0.501
S	SO ₃	2.497	SO ₃	S	0.401
S	SO ₄	2.996	SO ₄	S	0.334
S	K ₂ SO ₄	5.435	K ₂ SO ₄	S	0.184
S	MgSO ₄ * H ₂ O	4.316	MgSO ₄ * H ₂ O	S	0.232
S	MgSO ₄ * 7 H ₂ O	7.688	MgSO ₄ * 7 H ₂ O	S	0.130
S	CaSO ₄	4.246	CaSO ₄	S	0.236
S	(NH ₄) ₂ SO ₄	4.122	(NH ₄) ₂ SO ₄	S	0.243

PHOSPHORUS					
P	PO ₄	3.066	PO ₄	P	0.326
P	P ₂ O ₅	2.291	P ₂ O ₅	P	0.436
PO ₄	P ₂ O ₅	0.747	P ₂ O ₅	PO ₄	1.338
P ₂ O ₅	Ca ₃ (PO ₄) ₂	2.185	Ca ₃ (PO ₄) ₂	P ₂ O ₅	0.458

BORON					
B	H ₃ BO ₃	5.720	H ₃ BO ₃	B	0.175
B	Na ₂ B ₄ O ₇ * 10 H ₂ O	8.820	Na ₂ B ₄ O ₇ * 10 H ₂ O	B	0.113
B	B ₂ O ₃	3.220	B ₂ O ₃	B	0.311

COPPER					
Cu	CuSO ₄ * 5 H ₂ O	3.929	CuSO ₄ * 5 H ₂ O	Cu	0.255

MANGANESE					
Mn	MnSO ₄ * 4 H ₂ O	4.060	MnSO ₄ * 4 H ₂ O	Mn	0.246
Mn	MnCl ₂ * 4 H ₂ O	3.602	MnCl ₂ * 4 H ₂ O	Mn	0.278

Note: No liability is assumed for the correctness of the conversion factors

Given	Sought	Factor	Given	Sought	Factor
MOLYBDENUM					
Mo	$(\text{NH}_4)_6\text{Mo}_7\text{O}_{24} \cdot 4 \text{H}_2\text{O}$	1.840	$(\text{NH}_4)_6\text{Mo}_7\text{O}_{24} \cdot 4 \text{H}_2\text{O}$	Mo	0.543
Mo	Na_2MoO_4	2.146	Na_2MoO_4	Mo	0.466

SODIUM					
Na	Na_2O	1.348	Na_2O	Na	0.742
Na	NaCl	2.542	NaCl	Na	0.393
Na_2O	NaCl	1.886	NaCl	Na_2O	0.530

ZINC					
Zn	$\text{ZnSO}_4 \cdot 7 \text{H}_2\text{O}$	4.398	$\text{ZnSO}_4 \cdot 7 \text{H}_2\text{O}$	Zn	0.227

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Chemical formula	Designation
CALCIUM	
Ca	Elemental calcium
CaO	Calcium oxide (quicklime)
CaCO_3	Calcium carbonate
CaCl_2	Calcium chloride
CaSO_4	Calcium sulphate
$\text{CaSO}_4 \cdot 2 \text{H}_2\text{O}$	Calcium sulphate (gypsum)
$\text{Ca}(\text{OH})_2$	Calcium hydroxide (slaked lime)
MAGNESIUM	
Mg	Elemental magnesium
MgO	Magnesium oxide
MgCO_3	Magnesium carbonate (magnesite)
MgSO_4	Magnesium sulphate (epsom salt)
MgCl_2	Magnesium chloride
POTASSIUM	
K	Elemental potassium
K_2O	Potassium oxide
K_2SO_4	Potassium sulphate
KCl	Potassium chloride

Chemical formula	Designation
NITROGEN	
N	Elemental nitrogen
CO(NH ₂) ₂	Urea
NO ₃	Nitrate
NH ₃	Ammonia
NH ₄	Ammonium
(NH ₄) ₂ SO ₄	Ammonium sulphate
NH ₄ NO ₃	Ammonium nitrate (KAS, NAC)
Ca(CN) ₂	Calcium cyanide
N ₂ O	Nitrous oxide
SULFUR	
S	Elemental sulphur
SO ₂	Sulphur dioxide
SO ₃	Sulphur trioxide
SO ₄	Sulphate
K ₂ SO ₄	Potassium sulphate
MgSO ₄ * H ₂ O	Magnesium sulphate hydrate
MgSO ₄ * 7 H ₂ O	Magnesium sulphate heptahydrate
CaSO ₄	Calcium sulphate
(NH ₄) ₂ SO ₄	Ammonium sulphate
PHOSPHORUS	
P	Elemental phosphorus
PO ₄	Phosphate
P ₂ O ₅	Phosphorus pentoxide
Ca ₃ (PO ₄) ₂	Calcium phosphate
BORON	
B	Elemental boron
H ₃ BO ₃	Boric acid
Na ₂ B ₄ O ₇ * 10 H ₂ O	Borax (sodium tetraborate decahydrate)
B ₂ O ₃	Boric anhydride

Chemical formula	Designation
COPPER	
Cu	Elemental copper
$\text{CuSO}_4 \cdot 5 \text{H}_2\text{O}$	Copper sulphate pentahydrate
MANGANESE	
Mn	Elemental manganese
$\text{MnSO}_4 \cdot 4 \text{H}_2\text{O}$	Manganese sulphate tetrahydrate
$\text{MnCl}_2 \cdot 4 \text{H}_2\text{O}$	Manganese chloride tetrahydrate
MOLYBDENUM	
Mo	Elemental molybdenum
$(\text{NH}_4)_6\text{Mo}_7\text{O}_{24} \cdot 4 \text{H}_2\text{O}$	Ammonium heptamolybdate tetrahydrate
Na_2MoO_4	Sodium molybdate
SODIUM	
Na	Elemental sodium
Na_2O	Sodium oxide
NaCl	Sodium chloride (salt)
ZINC	
Zn	Elemental zinc
$\text{ZnSO}_4 \cdot 7 \text{H}_2\text{O}$	Zinc sulphate heptahydrate