

Chemistry: Metric Conversion Set

1 kilocat = 1000 cats each cat eats 100 centipedes, 1000 millipedes, and 1,000,000 micropedes

1 kilogram = 1000 grams 1 gram = 100 centigrams = 1000 milligrams = 1,000,000 micrograms
1 kiloliter = 1000 liters 1 liter = 100 centiliters = 1000 milliliters = 1,000,000 microliters
1 kilometer = 1000 meters 1 meter = 100 centimeters = 1000 millimeters = 1,000,000 micrometers
1 kilosecond = 1000 seconds 1 second = 100 centiseconds = 1000 milliseconds = 1,000,000 microseconds

A. One Step Conversions

1. Convert 34.5 cm to meters (0.345 m)
2. Convert 56.8 km to meters (56800 m)
3. Convert 987 mm to meters (0.987 m)
4. Convert 0.981 seconds to centiseconds (98.1 csec)
5. Convert 0.0872 kg to grams (87.2 g)
6. Convert 75600 microliters to liters (0.0756 L)
7. Convert 9800 liters to kiloliters (9.8 kL)
8. Convert 0.560 seconds to microseconds (560,000 μ sec)
9. Convert 7690 centigrams to grams (76.9 g)
10. Convert 89.5 kiloseconds to seconds (89,500 sec)

B. Two Step Conversions (some can be done in one)

“When in doubt, first convert to the standard grams, liters, seconds, meters, and seconds”

11. Convert 34.5 km to centimeters (3,450,000 cm)
12. Convert 56800 cm to kilometers (0.568 km)
13. Convert 987,000 mm to kilometers (0.987 km)
14. Convert 0.981 kiloseconds to centiseconds (98,100 csec)
15. Convert 0.0872 kg to milligrams (87,200 mg)
16. Convert 7560 microliters to milliliters (7.56 mL)
17. Convert 9800 centiliters to milliliters (98,000 mL)
18. Convert 0.560 centiseconds to microseconds (5,600 μ sec)
19. Convert 7690 milligrams to centigrams (769 cg)
20. Convert 89.5 kiloseconds to centiseconds (8,950,000 csec)

C. Numerator and Denominator Conversions

“When in doubt, first convert to the standard grams, liters, seconds, meters, and seconds”

21. Convert 30.0 m/sec to km/min. (1.8 km/min)
22. Convert 15.6 km/hr to m/sec (4.33 m/sec)
23. Convert 0.0098 liters/min to mL/sec (0.16 mL/sec)
24. Convert 46.7 kg/hr to g/sec (13.0 g/sec)
25. Convert 612 \$/kg to cents/gram (61.2 cents/g)
26. Convert 1.65 \$/Liter to cents / mL (0.165 cents/mL)
27. Convert 4.5 cm/min to km/hr (0.162 km/hr)
28. Convert 78.9 mg/mL to kg/L (0.0789 kg/L)
29. Convert 2.3 km/hr to m/day (55,200 m/day)
30. Convert 0.35 mL / min to L/hr (0.021 L/hr)

Chemistry: Metric Conversion Set Answers

1. Convert 34.5 cm to meters	34.5 cm	$\frac{1 \text{ m}}{100 \text{ cm}}$	
2. Convert 56.8 km to meters	56.8 km	$\frac{1000 \text{ m}}{1 \text{ km}}$	
3. Convert 987 mm to meters	987 mm	$\frac{1 \text{ m}}{1000 \text{ mm}}$	
4. Convert 0.981 seconds to csec	0.981 sec	$\frac{100 \text{ csec}}{1 \text{ sec}}$	
5. Convert 0.0872 kg to grams	0.0872 kg	$\frac{1000 \text{ g}}{1 \text{ kg}}$	
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11. Convert 34.5 km to centimeters	34.5 km	$\frac{1000 \text{ m}}{1 \text{ km}}$	$\frac{100 \text{ cm}}{1 \text{ m}}$
12. Convert 56800 cm to kilometers	56800 cm	$\frac{1 \text{ m}}{100 \text{ cm}}$	$\frac{1 \text{ km}}{1000 \text{ m}}$
13. Convert 987,000 mm to km	987,000 mm	$\frac{1 \text{ m}}{1000 \text{ mm}}$	$\frac{1 \text{ km}}{1000 \text{ m}}$
14. Convert 0.981 ksec to csec	0.981 ksec	$\frac{1000 \text{ sec}}{1 \text{ ksec}}$	$\frac{100 \text{ csec}}{1 \text{ sec}}$
15. Convert 0.0872 kg to milligrams	0.0872 kg	$\frac{1000 \text{ g}}{1 \text{ kg}}$	$\frac{1000 \text{ mg}}{1 \text{ g}}$
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21. Convert 30.0 m/sec to km/min.	30.0 $\frac{\text{m}}{\text{sec}}$	$\frac{1 \text{ km}}{1000 \text{ m}}$	$\frac{60 \text{ sec}}{1 \text{ min}}$
22. Convert 15.6 km/hr to m/sec	15.6 $\frac{\text{km}}{\text{hr}}$	$\frac{1000 \text{ m}}{1 \text{ km}}$	$\frac{1 \text{ hr}}{60 \text{ min}} \cdot \frac{1 \text{ min}}{60 \text{ sec}}$
23. Convert 0.0098 L/min to mL/sec	0.0098 $\frac{\text{L}}{\text{min}}$	$\frac{1000 \text{ mL}}{1 \text{ L}}$	$\frac{1 \text{ min}}{60 \text{ sec}}$
24. Convert 46.7 kg/hr to g/sec	46.7 $\frac{\text{kg}}{\text{hr}}$	$\frac{1000 \text{ g}}{1 \text{ kg}}$	$\frac{1 \text{ hr}}{60 \text{ min}} \cdot \frac{1 \text{ min}}{60 \text{ sec}}$
25. Convert 612 \$/kg to cents/gram	612 $\frac{\$}{\text{kg}}$	$\frac{100 \text{ cents}}{\$ 1}$	$\frac{1 \text{ kg}}{1000 \text{ g}}$