

BSAC Gas Mix Table for CCR

Gas Density in grams/Litre (g.l⁻¹) based upon 0 degrees C & 1.000 bar as defined by BS 8547 =

- Oxygen = 1.4102
- Helium = 0.1764
- Nitrogen = 1.2346

Gas density, and Equivalent Narcotic Depth (END) are calculated on breathing loop values at a setpoint PO₂ of 1.3 bar.

Best mixes based upon;

- PO₂ of the diluent gas @ target depth ≤ 1.10 bar.
- Gas density ~ 5.2 g.l⁻¹.
- END = ≤ 30 metres

Depth (m)	Dil Mix (O ₂ /He)	Dil PO ₂ (bar)	Loop Density (g.l ⁻¹)	Loop END (m)
35	21	0.95	5.8	31
	21/10	0.95	5.4	25
	21/15	0.95	5.1	23
	21/20	0.95	4.9	20
40	21	1.05	6.4	37
	21/10	1.05	5.9	31
	21/15	1.05	5.7	28
	21/20	1.05	5.4	25
	21/25	1.05	5.2	22
45	20/15	1.10	6.2	33
	20/20	1.10	5.9	30
	20/30	1.10	5.4	23
	20/35	1.10	5.1	20
	19/20	1.05	5.9	30
	19/25	1.05	5.7	27
	19/30	1.05	5.4	24
	19/35	1.05	5.1	20
50	18/30	1.08	5.8	28
	18/35	1.08	5.5	24
	18/40	1.08	5.2	21
	17/25	1.02	6.1	32
	17/30	1.02	5.8	28
	17/35	1.02	5.5	24
	17/40	1.02	5.2	21
55	17/35	1.12	5.9	28
	17/40	1.12	5.6	24
	17/45	1.12	5.3	20
	16/35	1.04	6.0	28
	16/40	1.04	5.6	25
	16/45	1.04	5.3	21
60	16/40	1.12	6.0	28
	16/45	1.12	5.6	24
	16/50	1.12	5.3	19
	15/40	1.05	6.0	28
	15/45	1.05	5.7	24
	15/50	1.05	5.3	20

Depth (m)	Dil mix (O ₂ /He)	Dil PO ₂ (bar)	Loop Density (g.l ⁻¹)	Loop END (m)
65	15/45	1.13	6.0	27
	15/50	1.13	5.6	22
	15/55	1.13	5.2	18
	14/45	1.05	6.0	27
	14/50	1.05	5.7	23
	14/55	1.05	5.3	18
70	14/50	1.12	6.0	26
	14/55	1.12	5.6	21
	14/60	1.12	5.2	16
	13/45	1.04	5.6	21
	13/50	1.04	6.0	26
	13/55	1.04	5.6	21
	13/60	1.04	5.2	16
	10/50	0.80	6.2	28
75	13/55	1.10	5.9	24
	13/60	1.10	5.5	18
	12/55	1.02	6.0	24
	12/60	1.02	5.5	19
	12/65	1.02	5.1	14
80	12/60	1.08	5.8	21
	12/65	1.08	5.3	16
85	12/60	1.14	6.0	23
	12/65	1.14	5.6	17
	11/65	1.05	5.6	18
	11/70	1.05	5.1	12
90	11/65	1.10	5.9	20
	10/65	1.00	5.9	21
	10/72	1.00	5.2	12
95	11/65	1.16	6.1	21
	10/65	1.05	6.2	22
	10/70	1.05	5.6	16
	10/75	1.05	5.1	9
100	10/70	1.10	5.8	17
	10/75	1.10	5.3	11
	9/70	0.99	5.8	18
	9/76	0.99	5.2	10
105	10/70	1.15	6.0	19
	9/70	1.04	6.1	20
	9/75	1.04	5.5	13
	9/77	1.04	5.2	9

Depth (m)	Dil mix (O ₂ /He)	Dil PO ₂ (bar)	Loop Density (g.l ⁻¹)	Loop END (m)
110	9/75	1.08	5.7	14
	9/78	1.08	5.2	8
115	9/75	1.13	5.9	15
	8/75	1.00	6.0	16
	8/81	1.00	5.2	7
120	8/75	1.04	6.2	17
	8/80	1.04	5.5	9
	8/82	1.04	5.2	6
125	8/80	1.08	5.7	10
	8/85	1.08	5.0	2
	7/80	0.95	5.8	12
	7/85	0.95	5.1	3
130	8/80	1.12	5.8	11
	8/85	1.12	5.1	2
	7/80	0.98	6.0	12
	7/85	0.98	5.2	4

Note;

1. The PO₂ in the third column is the PO₂ of the gas in the diluent cylinder at target depth. This value defines the PO₂ that can be achieved by a diluent flush when at target depth.
2. The Gas density and END columns give the values for the breathing loop gas that the diver is inspiring.
3. Equivalent Narcotic Depth (END) is calculated as defined by BS 8547 and references nitrogen only as narcotic.

BSAC Table of optimum CCR diluent gases.

Depth (m)	Dil mix (O ₂ /He)	Dil PO ₂ (bar)	Loop Density (g.l ⁻¹)	Loop END (m)
40	21/25	1.05	5.2	22
45	20/35	1.10	5.1	20
50	18/40	1.08	5.2	21
55	16/45	1.04	5.3	21
60	15/50	1.05	5.3	20
65	14/55	1.05	5.3	18
70	13/60	1.04	5.2	16
75	12/65	1.02	5.1	14
80	12/65	1.08	5.3	16
85	11/70	1.05	5.1	12
90	10/72	1.00	5.2	12
95	10/75	1.05	5.1	9
100	9/76	0.99	5.2	10
105	9/77	1.04	5.2	9
110	9/78	1.08	5.2	8
115	8/81	1.00	5.2	7
120	8/82	1.04	5.2	6
125	8/85	1.08	5.0	2
130	7/85	0.98	5.2	4