Na 22.990; K 39.098; I 126.91 (x 3 = 380.73
NaI 149.9, 84.66% Iodine (2.4% NaI = 24 mg/ml -> 20.3 mg I) 118.12 mg NaI > 100 mg I
KI 166.0 76.45% Iodine (10% KI = 100 mg/ml -> 76.5 mg I/ml) 130 mg KI > 99.38 mg I (need 130.84 mg to give 100)

T4 molar mass is 776.87 grams/mol (contains four iodine molecules) = 507.64 gm = 65.34% I
(100 mcg T4 has 65.34 mcg of elemental iodine, = 16.34 released to make T3)
T3 molar mass is 672.96 grams/mol (contains 3 iodine molecules) = 380.73 gm = 56.58% I

Water weighs 1 gm/ml so 1 gm = 1 ml
1 ppm = 1 mcg/gm; with water, 1 ml = 1 gm; therefore 1 mcg/gm = 1 mcg/ml **= 1 mg/L**
Calculating ppm from %:
1% = .01 gm/gm of carrier = 10 mg/ml = 10,000 mcg/ml = 10,000 ppm
0.1%= .001gm/gm of carrier = 1 mg/ml = 1,000 mcg/ml = 1,000 ppm
@ 20 drops /ml > .05 mcg/drop therefore 150 mg/drop = 3000 ppm

Disinfectant for beer is 12.5 ppm = 12.5 mg/L = 12.5 mcg/ml
Using 2% Lugols (50.6 mg/ml), need 12.5/50.6 = 0.247 ml, @20 drops/ml = 4.94 drops in 1 Liter; @15 drops/ml = 3.71 drops
Using 2% tincture (40.3 mg/ml), need 12.5/40.3 = 0.310 ml, @20 drops/ml = 6.2 drops in 1 Liter, @15 drops/ml = 4.65 drops
Disinfect water = 5-8 drops of 2% tincture/liter = 10-16 mg/ liter = 0.010 - 0.016 mg/ml =

150 mcg/drop = 3 mg/ml = 45 mg/15 ml = 45/50.6 ml 2% Lugols/15 ml = 0.889 ml 2% Lugols @ 20 drops/ml = 17.79;
@ 15 drops/ml = 13.3 drops
1 mg/gm = 1000 ppm = 1 mg/ml = 1 gm/L
1 gallon = 3.785 liters; 300 ml = 0.3 L 3.785/0.3 = 12.617
1 gallon = 8 oz/cup * 16 cups = 128 oz = 3785 ml > 29.570 ml/oz
1 qt = .9463 L 1 cup = 236.6 ml
Also needed: C, B1, B2, B3 (niacin), C, Selenium, Zn, Copper, Iron (ferritin)-> take 1 hour before taking iodine

	Etoh	IodiNe	+ IodiDe	TOTAL Elemental Iodine	ppm	Per Drop at 15 drops/ml	Per Drop (at 20 drops per ml)	Dilute 1 drop to x drops water for 150 mcg/drop	Dilute x drops to 60 ml Water to make 150 mcg/drop
Tincture of Iodine	50%	2% = 20 mg/ml	2.4% NaI = 24 mg/ml * 0.847 = 20.32 mg/ml I	**40.32 mg/ml**	40k		2.02 mg		
Strong Tincture	50%	7% = 70 mg/ml	5% KI = 50 mg/ml * 0.764 = 38.2 mg/ml I	108.2 mg/ml	108k		5.41 mg		
Lugols 2%		2% = 20 mg/ml	4% = 40 mg of KI * .765 = **30.6 mg/ml I**	**50.6 mg/ml**	51k	3.37 mg	**2.53 mg**	16.87	7.11
Lugols 5%		5% = 50 mg/ml	10% = 100 mg KI * 0.765 = **76.5 mg/ml I**	**126.5 mg/ml**	127k	8.43 mg	6.33 mg		
Lugols 15%		15% = 150 mg/ml	30% = 300 mg KI * 0.765 = **229.5 mg/ml I**	**379.5 mg/ml**	381k	25.29 mg	19.0 mg		
Povidine				**100 - 110 mg/ml (10-11%)**					

TABLE ALL BASED ON 2% Lugols (at 20 VERTICAL drops per ml, 2.53 mg/drop)
A = Antiseptic (beer) = 12.5 ppm = 0.00125%
K = Kill 100 ppm = 0.01% = 1 ml in 30 ml (other refs say 8 ppm = 1 drop per 375 drops (18.75 ml), or 53.33 drops (2.67 ml) /L)
P = Povidine ; T = Tincture; L = Lugols

	mcg/ drop	RDA	%	ppm = mcg/ ml	in 15 ml water		in 1 qt (32 oz) (946 ml)			In 1 liter		1 oz (30 ml) 2% Lugols in	Drops in 1 cup (240ml) for 12.5 ppm (12.5 mg/L)	1 drop CI1 IN X TOTAL = 0.01% (CIK)	
					ml	drops	gm I	ml	oz	ml	drops	**ml TOTAL**		ml	drops
CIA	0.625	1/240	0.00125	12.5											
CIK	5	1/30	0.01	100							0				0
CIS	15	1/10	0.03	300							3		1		3
CI1	75	1/2	0.150	1500							15		1		
T2	2020	13.47	4.04%	40.3k						20.2	404	404		20.2	404
L2	2530	16.87	5.06%	50.6k						25.3	506	506		25.3	506
L5	6330	42.2	12.66%	127k						63.3	1266			63.3	1266
L15	18990														
P															

New Volume = (Old Volume x Old Concentration)/New Concentration
Each bottle will have 10 ml ~ 200 drops (100 days at 2 drops/day)
Cheik-I-Dine I: 8/13/2018 New formulation
FOR 75 mcg/drop = 1500 mcg/ml; Add 1 oz (30 ml) 2% Lugols to 952 ml water (to total 1,012 ml > 101 bottles @ 10 ml/bottle or 15 ml to 476 ml to total 506 ml > 50 bottles of 10, 15 bottles of 30; or dilute 28 ml to 1 qt (946 ml)

	I2	KI	NaI	Water	Etoh 95%	I2 cost	KI cost	NaI cost	cost/ml	30 ml Bottle	ml 2% Lugol in 30 ml	
T2	2 gm		2.4 gm	47 ml	53 ml	0.36	--					
L2	2 gm	4 gm	--	100 ml	--	0.36	0.60		$0.0096	$1.00		
L5	5 gm	10 gm	--	100 ml	--							
L15	15 gm	30 gm	--	100 ml	--							
CI											1.78	$.017