

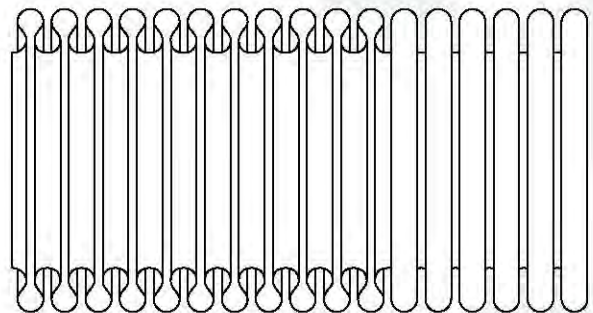


FLEX-PRESSION ANNULAR CORRUGATED HOSE

STAINLESS STEEL: 304, 321, 316L & MONEL 400 STANDARD, CLOSE PITCH & SUPERFLEX

NOMINAL I.D. (INCHES)	HOSE TYPE	HOSE O.D. (INCHES)	WALL THICKNESS (INCHES)	BEND RADIUS STATIC (INCHES)	BEND RADIUS CONSTANT (INCHES)	MAX WORKING PRESSURE (PSIG)	BURST PRESSURE (PSIG)
1/2"	SSU	0.76	0.010	1.7	7.0	75	---
	SSB	0.81				1125	4500
3/4"	SSU	1.05	0.010	2.0	8.0	50	---
	SSB	1.10				1050	4200
1"	SSU	1.35	0.010	3.0	10.0	40	---
	SSB	1.40				875	3500
1 1/4"	SSU	1.78	0.015	3.1	10.0	40	---
	SSB	1.83				650	2600
1 1/2"	SSU	2.17	0.016	3.5	11.0	20	---
	SSB	2.25				650	2600
2"	SSU	2.63	0.016	4.5	12.0	15	---
	SSB	2.71				495	1980
2 1/2"	SSU	3.39	0.016	5.0	13.0	12	---
	SSB	3.47				365	1475
3"	SSU	3.97	0.016	7.5	16.0	8	---
	SSB	4.05				250	1000
3 1/2"	SSU	4.43	0.016	8.0	17.0	7	---
	SSB	4.51				330	1325
4"	SSU	4.83	0.016	10.0	20.0	5	---
	SSB	4.91				270	1090
5"	SSU	5.97	0.018	12.0	24.0	3	---
	SSB	6.07				225	900
6"	SSU	6.95	0.018	15.0	30.0	3	---
	SSB	7.05				185	739
8"	SSU	9.10	0.020	20.0	40.0	3	---
	SSB	9.30				142	569
10"	SSU	11.24	0.024	25.0	50.0	2	---
	SSB	11.44				160	650
12"	SSU	13.26	0.028	30.0	60.0	2	---
	SSB	13.46				150	600
14"	SSU	14.85	0.040	38.0	75.0	2	---
	SSB	15.05				130	520
16"	SSU	18.43	0.040	36.0	72.0	1	---
	SSB	18.68				110	440
18"	SSU	20.40	0.040	37.0	74.0	1	---
	SSB	20.70				100	400
20"	SSU	22.80	0.040	38.0	76.0	1	---
	SSB	23.10				80	340

SSU = hose only SSB = with single braid
 For SS2B = with double braid, multiply SSB max. working pressure by 1.5
 Specified pressure ratings are valid at 70°F, for greater operating temperatures, maximum allowable working pressures must be decreased according to the temperature correction factors chart.
 6" I.D. and above available with heavy duty braided braid. Full vacuum service all sizes. Heavy duty braid and (heavy wall) hose available for higher working pressures.



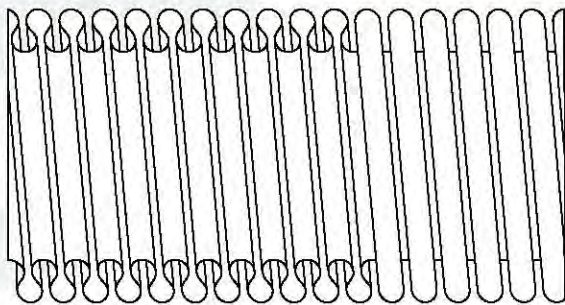
Annular Corrugation.



FLEX-PRESSION HELICAL CORRUGATED HOSE

STAINLESS STEEL: 304, 321, 316L & MONEL 400 STANDARD, CLOSE PITCH & SUPERFLEX

NOMINAL I.D. (INCHES)	HOSE TYPE	HOSE O.D. (INCHES)	WALL THICKNESS (INCHES)	BEND RADIUS		MAX WORKING PRESSURE (PSIG)	BURST PRESSURE (PSIG)
				STATIC (INCHES)	CONSTANT (INCHES)		
1/4"	SSU	0.43	0.010	1.7	3.5	140	-
	SSB	0.48				2000	8000
3/8"	SSU	0.59	0.010	2.5	5.1	100	-
	SSB	0.64				1850	7400
1/2"	SSU	0.73	0.010	3.4	5.9	75	-
	SSB	0.78				1125	4500
3/4"	SSU	1.00	0.010	4.3	7.4	50	-
	SSB	1.05				1050	4200
1"	SSU	1.30	0.010	5.5	8.4	40	-
	SSB	1.35				875	3500



Helical Corrugation.

SSU = hose only

SSB = with single braid

For SS2B = with double braid, multiply SSB max. working pressure by 1.5. Specified pressure ratings are valid at 70°F, for greater operating temperatures, maximum allowable working pressures must be decreased according to the temperature correction factors chart.

TEMPERATURE CORRECTION FACTORS

TEMPERATURE °F	TEMPERATURE °C	304-316 STAINLESS	321 STAINLESS	MONEL
70	21	1.00	1.00	1.00
150	66	.96	.97	.93
200	93	.92	.94	.90
250	121	.91	.92	.87
300	149	.86	.88	.83
350	177	.83	.86	.82
400	204	.82	.83	.79
450	232	.80	.81	.77
500	260	.77	.78	.73
600	316	.73	.74	.72
700	371	.69	.70	.71
800	427	.64	.66	.70
900	482	.58	.62	
1000	538		.60	
1100	593		.58	
1200	649		.55	
1300	704		.50	
1400	760		.44	
1500	816		.40	

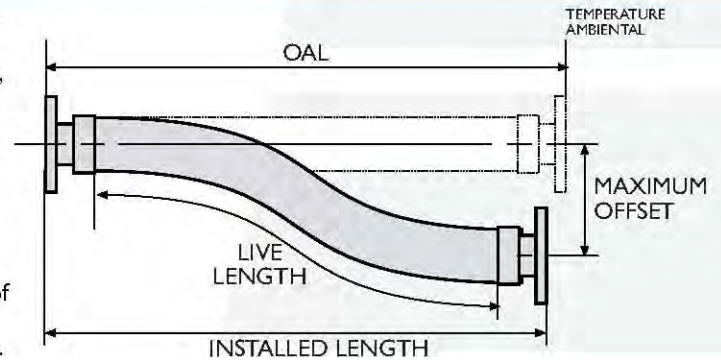




COMPUTING MINIMUM LENGTHS FOR HOSE ASSEMBLIES

For optimum service life, each hose assembly must be designed to the specific application.

1. Select proper hose, from product pages taking into consideration the size, pressure, and temperature requirement.
2. To compute minimum live length requirements, follow the instructions below:
 - A. Locate the minimum bend radius for intermittent flexure by referring to that column on the product specification page for that hose.
 - B. Locate this bend radii number in the left column of the table below. (If the radii falls between numbers on the table, use next highest number).
 - C. Locate the required offset for your applications in the figures at the top of the table.
 - D. The minimum live length required is the intersecting box of the 2 columns.
 - E. To determine static bend minimum lengths, simply substitute static bend radii data in step B and continue in the same manner.



OFFSET MOTION (max. dist. from center line)

1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/2" | 2" | 3" | 4" | 5" | 6" | 8" | 10"

CENTER LINE BEND RADIUS (in.)

MINIMUM LIVE LENGTH REQUIRED FOR OFFSET MOTION

2	1 1/4	1 3/4	2 1/4	2 1/2	3 1/4	3 3/4	4 1/2	5 1/4	6 3/4	8	9 1/4	10 1/2	12 3/4	15
4	1 3/4	2 1/2	3	3 1/2	4 1/2	5	6 1/4	7 1/4	9	11 3/4	12	13 1/2	16	18 1/2
6	2 1/4	3 1/4	3 3/4	4 1/4	5 1/4	6 1/4	7 1/2	8 3/4	10 3/4	12 3/4	14 1/4	16	19	21 1/2
8	2 1/2	3 1/2	4 1/4	5	6	7	8 3/4	10	12 1/2	14 1/2	16 1/4	18	21 1/4	24 1/4
10	2 3/4	4	4 3/4	5 1/2	6 3/4	8	9 3/4	11 1/4	13 3/4	16	18	20	23 1/2	26 1/2
12	3	4 1/4	5 1/4	6	7 1/2	8 1/2	10 1/2	12 1/4	15	17 1/2	19 1/2	21 1/2	25 1/2	28 3/4
14	3 1/4	4 3/4	5 3/4	6 1/2	8	9 1/4	11 1/4	13 1/4	16 1/4	18 3/4	21	23 1/2	27 1/4	30 3/4
16	3 1/2	5	6	7	8 1/2	10	12 1/4	14	17 1/4	20	22 1/2	25	29	32 3/4
18	3 3/4	5 1/4	6 1/2	7 1/2	9	10 1/2	13	14 3/4	18 1/4	21 1/4	24	26	30 1/2	34
20	4	5 1/2	6 3/4	7 3/4	9 1/2	11	13 1/2	15 3/4	19 1/4	22 1/2	25	27 1/2	32 1/4	36 1/4
25	4 1/2	6 1/4	7 1/2	8 3/4	10 3/4	12 1/4	15	17 1/2	21 1/2	25	28	30 1/2	35 3/4	40
30	4 3/4	6 3/4	8 1/4	9 1/2	11 3/4	13 1/2	16 1/2	19	23 1/2	27 1/4	30 1/2	33 1/2	40	43 3/4
35	5 1/4	7 1/4	9	10 1/4	12 1/2	14 1/4	17 3/4	20 1/4	26 1/4	29 1/2	32 3/4	36	42	47
40	5 1/2	8	9 1/2	11	13 1/2	15 1/2	19	22	27	31 1/4	35	38 1/2	44 3/4	50
45	6	8 1/4	10	11 3/4	14 1/4	16 1/2	20 1/4	23 1/2	28 1/2	33	37	41	47 1/2	53
50	6 1/4	8 3/4	10 3/4	12 1/4	15	17 1/2	21 1/2	24 1/2	30	35	39	43	50	56
60	6 3/4	9 1/2	11 3/4	13 1/2	16 1/2	19	23 1/4	27	33	38	43	47	54 1/2	61
70	7 1/4	10 1/4	12 3/4	14 3/4	17 3/4	20 1/2	25	29	35 1/2	41 1/2	46	51	58 3/4	65 3/4

APPLICABLE FOR STATIC BEND ONLY

MINIMUM LIVE HOSE LENGTH FOR NORMAL VIBRATION

1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	6"	8"
5"	5 1/2"	6"	6 1/2"	7"	8 1/2"	9"	9 1/4"	9 1/2"	10 1/2"	11"	12"	13"	14 1/2"	16 3/4"

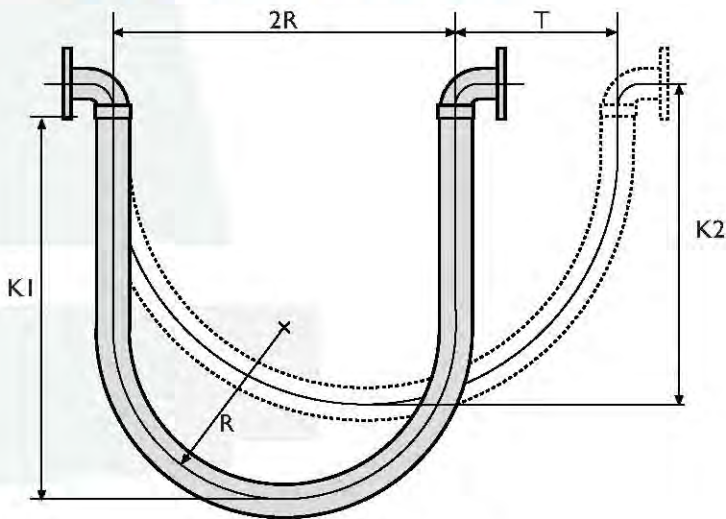
NOTES:

1. If vibration is severe, add 20% to minimum live length.
2. Add braid sleeves length: 1/4" to 3/4" dia add 1", 1" to 2" dia add 1 1/2" and 2 1/2" to 12" dia add 2".
3. Add fittings length to obtain overall length.
4. If vibration is extremely severe, consult our engineering department.



COMPUTING MINIMUM LENGTHS FOR HOSE ASSEMBLIES

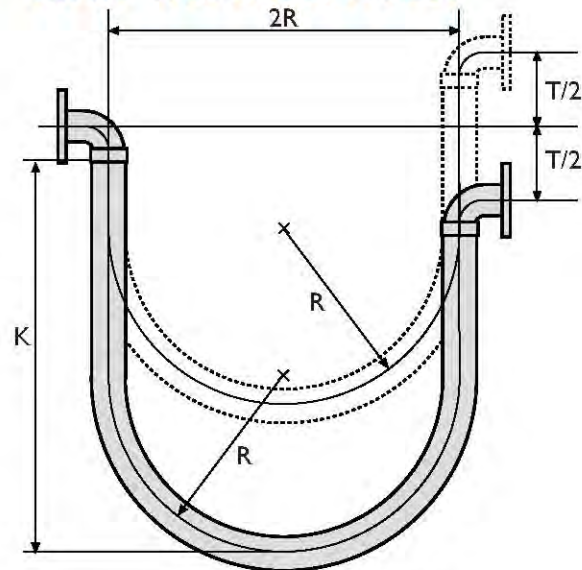
HORIZONTAL TRAVEL LOOP INSTALLATION



$$\begin{aligned} \text{L.L.} &= 4 \cdot R + 1.57T \\ K1 &= 1.43 \cdot R + 0.785T \\ K2 &= 1.43 \cdot R + T/2 \end{aligned}$$

Note: Always use pipe elbows for this type of installation.

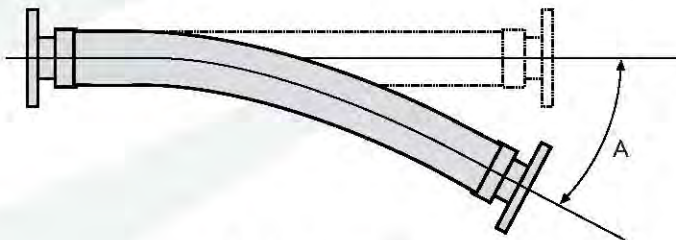
VERTICAL TRAVEL LOOP INSTALLATION



$$\begin{aligned} \text{L.L.} &= 4 \cdot R + T/2 \\ K &= 1.43 \cdot R + T/2 \end{aligned}$$

Note: Always use pipe elbows for this type of installation.

ANGULAR



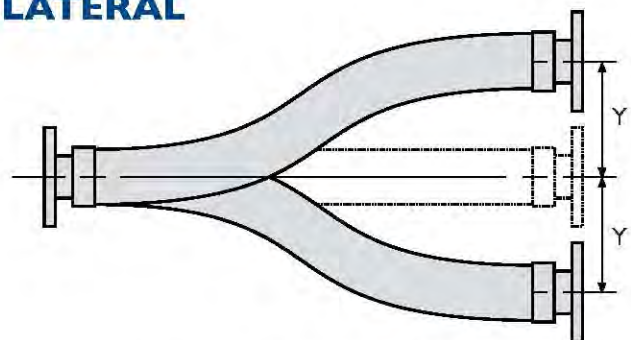
$$\text{L.L.} = \frac{3.1416 \cdot R \cdot A}{180} + 2 \cdot F$$

- LL = HOSE LIVE LENGTH (INCHES)
- I.L.L. = INSTALLED HOSE LIVE LENGTH (INCHES)
- R = CENTERLINE BEND RADIUS (INCHES)
- Y = LATERAL OFFSET (INCHES)
- A = BEND ANGLE (DEGREES)
- T = TRAVERSE (INCHES)
- F = HOSE NOMINAL DIAMETER (INCHES)

NOTES:

1. For intermittent offset, movement must not exceed 25% R value.
2. F is a safety factor to eliminate stress on welds caused by movement.

LATERAL



$$\begin{aligned} \text{L.L.} &= \sqrt{(6 \cdot Y \cdot R) + Y^2} + (2 \cdot F) \\ \text{I.L.L.} &= 0.95 \cdot \text{L.L.} \end{aligned}$$

Note: Where motion "Y" occurs both sides of centerline, hose live length should be based on total travel or 2 times "Y"





CORROSION RESISTANCE CHART

MEDIA	TEMP °F	18-8 STAINLESS STEEL	18-8 MO STEEL	PTFE	MEDIA	TEMP °F	18-8 STAINLESS STEEL	18-8 MO STEEL	PTFE	MEDIA	TEMP °F	18-8 STAINLESS STEEL	18-8 MO STEEL	PTFE
Acetic Acid	70°	A	A	A	Chromic Acid (10%)	Boiling	C	B	A	Parafin	Hot	A	A	A
Acetic Anhydride	Boiling	A	A	A	Cider	70°	A	A	A	Phosphoric Acid (20%)	Boiling	C	B	A
Acetone	Boiling	A	A	A	Citric Acid (15%)	Boiling	B	A	A	Potassium Carbonate	Hot	A	A	A
Acetylene	70°	A	A	A	Coffee	Boiling	A	A	A	Potassium Chloride (5%)	Boiling	B	B	A
Alcohols	Boiling	B	A	A	Copper Chloride (5%)	70°	C	C	A	Potassium Chromate (25%)	Boiling	A	A	A
Aluminum Chloride	70°	C	C	A	Copper Nitrate	Hot	A	A	A	Potassium Cyanide	70°	A	A	A
Aluminum Hydroxide	70°	A	A	A	Copper Sulfate	Boiling	A	A	A	Potassium Hydroxide (50%)	Boiling	B	A	A
Aluminum Sulfate (10%)	Boiling	B	A	A	Corn Oil	70°	A	A	A	Potassium Sulfate (5%)	Hot	B	A	A
Ammonia, Dry	Hot	A	A	A	Cottonseed Oil	70°	A	A	A	Propane	70°	A	A	A
Ammonia, Moist	Boiling	A	A	A	Creosote	Hot	A	A	A	Rosin	Molten	A	A	A
Ammonium Hydroxide	70°	A	A	A	Crude Oil	Hot	B	A	A	Sea Water	70°	B	B	A
Ammonium Chloride (50%)	Boiling	B	B	A	Ethers	70°	A	A	A	Sewage	70°	A	A	A
Ammonium Nitrate	70°	A	A	A	Ethyl Acetate (conct)	70°	A	A	A	Soap Solutions	70°	A	A	A
Ammonium Sulfate	Boiling	B	A	A	Ethyl Chloride	70°	A	A	A	Sodium Bicarbonate (5%)	150°	A	A	A
Amyl Acetate (conct)	70°	A	A	A	Ethylene Glycol	70°	A	A	A	Sodium Bisulfite	70°	A	A	A
Amyl Alcohol	70°	A	A	A	Ferric Chloride	70°	C	C	A	Sodium Carbonate (50%)	Boiling	A	A	A
Aniline (conct)	70°	A	A	A	Ferric Sulfate (10%)	Boiling	B	A	A	Sodium Chloride (5%)	150°	C	B	A
Aniline Hydrochloride	70°	C	C	A	Ferrous Sulfate	Boiling	B	A	A	Sodium Cyanide	70°	A	A	A
Asphalt	Hot	A	A	A	Formaldehyde (40%)	70°	B	B	A	Sodium Hydroxide	Boiling	A	A	A
Atmosphere, Industrial	70°	A	A	A	Formic Acid (50%)	50°	B	A	A	Sodium Hypochlorite (5%)	70°	C	B	A
Barium Carbonate	70°	A	A	A	Freon	70°	A	A	B	Sodium Nitrate	70°	B	B	A
Barium Chloride	Hot	B	A	A	Fruit Juices	70°	A	A	A	Sodium Peroxide (10%)	150°	A	A	A
Barium Hydroxide	Hot	A	A	A	Furfural	70°	A	A	A	Sodium Phosphate	70°	A	A	A
Barium Sulfate	70°	A	A	A	Gasoline	70°	A	A	A	Sodium Sulfate (10%)	150°	B	A	A
Barium Sulfide	70°	A	A	A	Gelatine	70°	A	A	A	Sodium Sulfide (10%)	150°	B	A	A
Beer	70°	A	A	A	Glue (Acid Solution)	70°	B	A	A	Sodium Thiosulfate	70°	A	A	A
Benzene	Hot	A	A	A	Glycerine	70°	A	A	A	Steam	200°	A	A	A
Benzoic Acid	70°	A	A	A	Hydrobromic Acid	70°	C	C	A	Stearic Acid	70°	B	A	A
Benzol	Hot	A	A	A	Hydrochloric Acid	70°	C	C	A	Sugar Solutions	70°	A	A	A
Black Liquor	Hot	B	B	A	Hydrocyanic Acid	70°	A	A	A	Sulfur, Dry	350°	A	A	A
Bleaching Powder, Wet	70°	C	C	A	Hydrofluoric Acid	70°	C	C	A	Sulfur, Molten	200°	C	B	A
Borax (5%)	Hot	A	A	A	Hydrogen Peroxide	70°	A	A	A	Sulfur Chloride, Dry	Hot	C	C	A
Boric Acid (5%)	Boiling	B	A	A	Hydrogen Sulfide, Dry	70°	A	A	A	Sulfur Dioxide, Dry	70°	A	A	A
Bromine, Dry	70°	C	C	C	Hydrogen Sulfide, Moist	70°	B	A	A	Sulfur Dioxide, Moist	70°	C	B	A
Bromine, Moist	70°	C	C	C	Kerosene	70°	A	A	A	Sulfur Trioxide, Dry	70°	B	B	A
Butane	70°	A	A	A	Lacquers	70°	C	A	A	Sulfuric Acid (95-100%)	70°	A	A	A
Buttermilk	70°	A	A	A	Lacquers Solvents	70°	C	A	A	Sulfuric Acid (80-95%)	70°	B	B	A
Butyl Alcohol	70°	A	A	A	Lactic Acid (5%)	150°	B	A	A	Sulfuric Acid (40-80%)	Boiling	C	C	A
Butyric Acid (5%)	Boiling	A	A	A	Lime	70°	A	A	A	Sulfuric Acid (40%)	300°	C	C	A
Calcium Chloride	70°	B	A	A	Lime-Sulfur	70°	B	B	B	Tannic Acid	150°	A	A	A
Calcium Hydroxide (20%)	Boiling	C	A	A	Linseed Oil	70°	A	A	A	Tar	150°	A	A	A
Calcium Hypochlorite (20%)	70°	C	B	A	Magnesium Chloride (5%)	Hot	C	B	A	Tartaric Acid (10%)	70°	B	A	A
Cane Sugar Syrups	Hot	A	A	A	Magnesium Sulfate	Hot	B	A	A	Toluene	70°	A	A	A
Carbolic Acid (phenol)	Boiling	A	A	A	Mercury	70°	A	A	A	Trichloroacetic Acid	70°	C	C	A
Carbon Dioxide, Dry	Hot	A	A	A	Mercury Salts	70°	C	C	A	Trichlorethylene, Dry	70°	A	A	A
Carbon Dioxide, Moist	Hot	A	A	A	Methyl Chloride, Dry	70°	A	A	A	Trichlorethylene, Moist	70°	C	B	A
Carbonated Water	70°	A	A	A	Milk	Hot	A	A	A	Turpentine	70°	A	A	A
Carbonated Beverages	70°	A	A	A	Mine Water	70°	A	A	A	Varnish	70°	A	A	A
Carbon Tetrachloride, Dry	Boiling	A	A	A	Natural Gas	70°	A	A	A	Vinegar	70°	A	A	A
Carbon Tetrachloride, Moist	Boiling	C	C	A	Nitric Acid (conct)	Boiling	B	A	A	Water	70°	A	A	A
Chlorine, Dry	70°	C	B	A	Nitrogen	70°	A	A	A	Zinc Chloride	Boiling	C	B	A
Chlorine, Moist	70°	C	C	A	Oleic-Acid	Boiling	B	A	A	Zinc Sulfate	Boiling	B	A	A
Chlorinated Water	70°	C	C	A	Oxalic Acid (10%)	Boiling	C	B	A					
Chloroform, Dry	70°	A	A	A	Oxygen	70°	A	A	A					

A = Resistant B = Partially Resistant C = Non Resistant

