Weather Balloons and Accessories

HOSKIN SCIENTIFIC

TOTEX

www.hoskin.ca

Balloon Features

TOTEX Corporation commenced the manufacturing of meteorological balloons in 1937. The company pioneered the successful development of the mold rotation system of manufacturing meteorological balloons in 1940 and continues to manufacture its products today employing the same process. The mold containing the latex mixture is rotated to form multi layered and extremely thin film to produce a strong and uniform thickness and also form maximum performance balloons. The company is therefore confident that the mold rotation system is the most appropriate manufacturing method known today for meteorological balloons.

The most distinguished policy characteristic of our company lies in the fact that the company confines its manufacturing to order production. Each and every one of the balloons at every stage of production, is subjected to constant and severe controls and inspection, and from every production lot, samples are selected at random and subjected to bursting tests prior to shipment.

TA Type (Natural Latex)
This balloon was developed in the 1940's and is made from a natural latex compound which is highly elastic and tear resistant. Physical properties are retained at extremely low temperatures and the latex compound contains additives which contribute to its resistance to oxidation and ozone. The robustness of the rubber film allows the fully inflated balloon to maintain its spherical shape making it particularly suitable for severe weather launches.

TX Type (Special Latex Compound)
The TX Type balloon was first developed in 1988 and research continues in seeking a special latex compound with other chemicals which permits balloons to reach the Tropopause where temperatures are
lower than -75 degrees celsius and altitudes exceed 10 hPA.

If you have any questions or would like more information about weather balloons, please contact us with the following details:

- Purpose of observation and location
- Local time of observation (daytime or night)
- Payload
- Nozzle lift or free lift
- Ascent rate
- Desired altitude

TA Type (Natural Latex) Ceiling Balloons

Reference	TA 10	TA 20	TA 30	TA 45	TA 100
Colour	red			red or uncoloured	
Average Weight (gr)	10	20	30	45	100
Neck Diameter (cm)	2.3+-0.3	1.4+-0.3	1.4+-0.3	1.4+-0.3	1.4+-0.3
Neck Length (cm)	5.0+-1.0	8.0+-2.0	8.0+-2.0	8.0+-0.3	8.0+-2.0
Flaccid Body Length (cm)	13	24	28	36	53
Barely Inflated Diameter (cm)	8	15	18	25	34
Payload (gr)	0	0	0	0	0
Recommended Free Lift (gr)	4.4	29.8	59	104	294
Nozzle Lift (gr)	4.4	29.8	59	104	294
Gross Lift (gr)	14.4	49.8	89	149	394
Diameter at Release (cm)	29	44	53	63	87
Volume at Release (cu. m)	0.01	0.04	0.08	0.13	0.34
Rate of Ascent (m/min)	60	120	150	180	250
Diameter at Burst (cm)	45	70	88	110	196
Bursting Altitude (km)	11.8	12.4	13.1	14.0	18.8
Bursting Pressure (hPa)	199.5	181.5	162.5	141.0	66.2

TA Type (Natural Latex) Sounding Balloons - from 200 to 1000 gr

Reference	TA 200	TA 300	TA 350	TA 450	TA 500	TA 600	TA 700	TA 800	TA 1000
Colour	uncoloured								
Average Weight (gr)	200	300	350	450	500	600	700	800	1000
Neck Diameter (cm)	3	3	3	3	3	3	3	3	3
Neck Length (cm)	12	12	12	12	12	12	12	12	12
Flaccid Body Length (cm)	86	108	118	135	143	157	171	184	206
Barely Inflated Diameter (cm)	55	69	75	86	91	100	109	117	131
Payload (gr)	250	250	250	250	250	250	250	250	250
Recommended Free Lift (gr)	510	560	585	635	655	870	920	970	1060
Nozzle Lift (gr)	760	810	835	885	905	1120	1170	1220	1310
Gross Lift (gr)	960	1110	1185	1335	1405	1720	1870	2020	2310
Diameter at Release (cm)	117	123	125	130	133	142	146	150	157
Volume at Release (cu. m)	.83	.97	1.03	1.16	1.22	1.5	1.63	.76	2.01
Rate of Ascent (m/min)	320	320	320	320	320	320	320	320	320
Diameter at Burst (cm)	300	378	412	472	499	605	653	700	786
Bursting Altitude (km)	21.2	24.7	25.9	27.7	28.4	30.8	31.8	32.6	33.9
Bursting Pressure (hPa)	45.3	26.3	21.9	16.6	14.9	10.4	8.9	7.9	6.6

TA Type (Natural Latex) Sounding Balloons - from 1200 to 3000 gr

Reference	TA 1200	TA 1500	TA 2000	TA 3000
Colour	uncoloured/natural			
Average Weight (gr)	1200	1500	2000	3000
Neck Diameter (cm)	3	3	5	5
Neck Length (cm)	12	12	18	18
Flaccid Body Length (cm)	226	253	289	357
Barely Inflated Diameter (cm)	144	161	184	227
Payload (gr)	1050	1050	1050	1050
Recommended Free Lift (gr)	1190	1280	1420	1670
Nozzle Lift (gr)	2240	2330	2470	2720
Gross Lift (gr)	3440	3830	4470	5720
Diameter at Release (cm)	179	185	195	212
Volume at Release (cu. m)	2.99	3.33	3.89	4.97
Rate of Ascent (m/min)	320	320	320	320
Diameter at Burst (cm)	863	944	1054	1300
Bursting Altitude (km)	33.2	34.2	35.4	37.9
Bursting Pressure (hPa)	7.3	6.3	5.3	3.7

Other weights are available upon request (i.e.: 1800 gr, etc.)

TX Type (Special Latex Compound) Cold Weather Balloons

Reference	TX 800	TX 1000	TX 1200	TX 2000	TX 3000
Colour	uncoloured/natural				
Average Weight (gr)	800	1000	1200	2000	3000
Neck Diameter (cm)	3	3	3	5	5
Neck Length (cm)	12	12	12	18	18
Flaccid Body Length (cm)	184	206	226	289	357
Barely Inflated Diameter (cm)	117	131	144	184	227
Payload (gr)	250	250	1050	1050	1050
Recommended Free Lift (gr)	970	1060	1190	1420	1670
Nozzle Lift (gr)	1220	1310	2240	2470	2720
Gross Lift (gr)	2020	2310	3440	4470	5720
Diameter at Release (cm)	150	157	179	195	212
Volume at Release (cu. m)	1.76	2.01	2.99	3.89	4.97
Rate of Ascent (m/min)	320	320	320	320	320
Diameter at Burst (cm)	738	828	910	1079	1331
Bursting Altitude (km)	33.6	35	34.2	35.8	38.3
Bursting Pressure (hPa)	6.9	5.6	6.3	5	3.5

Parachutes

No. 5710-05/No. 160V-05

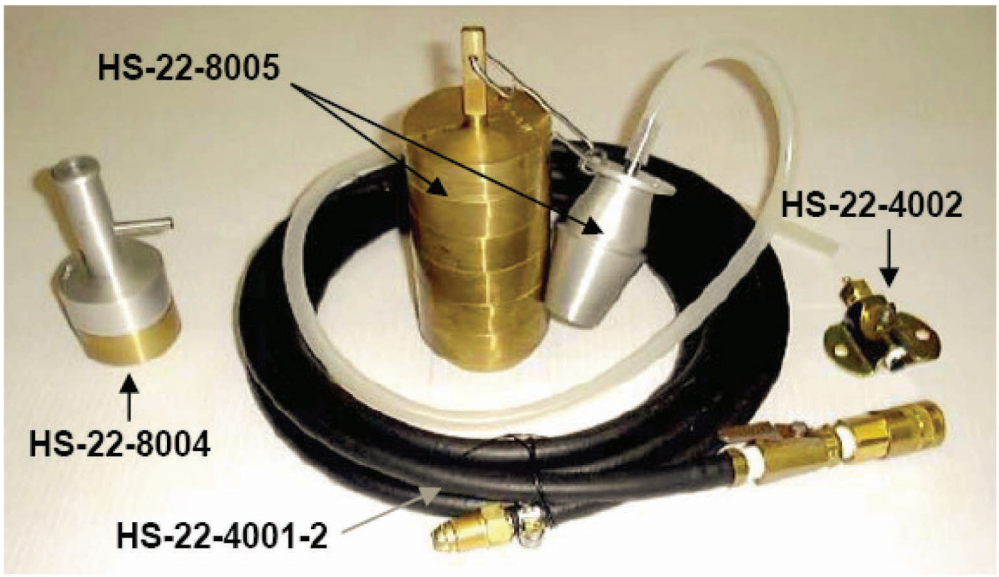
The parachute shall consist of three major components: canopy made of orange/red coloured polyethylene film, cotton shroud lines and orange coloured plastic spreader hoop. A spreader hoop with elastic hanger of the parachute is designed to hang firmly. Vaisala radiosonde unwinder under the spreader hoop. It is not only easier to insert the hook of the unwinder into elastic hanger but also intended to avoid slipping it from the hanger. More stable performance of the unwinder is expected.

	For Vaisala Radiosondes/Ozonesondes	
	No. 5710-05	No. 160V-05
Weight (gr)	70	180
Canopy Diameter (cm)	94	156
Shroud Line (cm) (8)	60	115
Top String (m)	2	-
Top D Ring	-	1 pc
Spreader Hoop Diameter (cm)	23	23
Elastic Hanger (cm)	3.5 x 7	3.5 x 7
Bottom D Ring	-	-
Descent Rate at 1,000 hPa surface	3.6 - 3.8 m/sec at 300 gr load	3.8 - 4.0 m/sec at 1,000 gr load
Export Packing		
Pieces per carton box	-	-
L.W.H. (cm)	55x49x35 0.10 m^3	55x49x35 0.10 m^3
G.W. (kgs)	9.5	13.0
V.W. (kgs)	15.8	15.8

Balloon Inflation Kit

Model Number: HS-22-8100

The Balloon Inflation Kit, Model HS-22-8100 will inflate balloons from 10 to 1500 grams with neck sizes of approximately .6 inches (14 mm) in diameter for the 30 and 100 gram balloons and 1.3 inch (32 mm) diameter for the 200 to 1500 gram balloons. The kit includes the following components:



HS-22-4009

HS-22-4003

HS-22-4001-2 High Pressure Inflation Hose with Valve The high pressure inflation hose is 12 feet long, attaches to a tank regulator and includes the "Inflation Valve/Stopcock," Model 22-4002 and a "quick connect" female connector for use with an inflation nozzle filling hose equipped with a male "quick connect" connector.

HS-22-4002 Inflation Valve/Stopcock The inflation valve/stopcock is included as part of the high pressure inflation hose assembly Model 22-4001-2, and allows fine adjustment of inflation rate of balloon. (Can be purchased separate from hose.)

HS-22-4003 Inflation Nozzle for filling 10 gram, ceiling balloons with neck sizes of approximately .9 inch (23 mm) diameter. Nozzle weight 44 grams. Complete with 36 inch filling hose with male "quick connect" for connection with the high pressure inflation hose Model 22-4001-2.

HS-22-8004 Inflation Nozzle System The Model 22-8004 Inflation Nozzle System for 30 and 100 gram balloons with neck sizes of approximately .6 inches (14 mm) in diameter. Includes inflation nozzle, supplementary weights for night flights, and a 36 inch filling hose with male "quick connect" for connecting to the high pressure hose female "quick connect".

HS-22-8005 Inflation Nozzle System The Model 22-8005 Inflation Nozzle System for filling 200 to 1500 gram balloons with neck sizes of approximately 1.3 inch (32 mm) diameter. Includes inflation nozzle and supplementary weights with weight hanger. Complete with 36 inch filling hose with male "quick connect" for connecting to the high pressure hose female "quick connect".

HS-22-4009 Helium Regulator for use with standard tank of helium. Connects with Model 22-4001-2, high pressure inflation hose.

Hoskin Scientific Limited has been supplying testing and monitoring instruments since 1946. Although our range is broad, we focus on three major markets including:

Geotechnical & Materials Testing

Test & Measurement Instrumentation

Environmental Monitoring

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