

**TECHNICAL DATA SHEET
AR CAPS® ACID RESISTANT CASPULES**

- AR CAPS® are manufactured with HPMC, HPMCP, water and colorants.
- The cellulose used for the manufacturing of AR CAPS® is derived from Slash Pine Tree
- AR CAPS® produced on our premises are suitable for human consumption.
- AR CAPS® raw materials meet all established requirements of the USP.
- AR CAPS® are soluble in water.
- AR CAPS® disintegrate in NLT 60 minutes in gastric fluid simulated and NMT 60 minutes in intestinal fluid simulated.
- AR CAPS® moisture content is kept between 4% and 10%
- AR CAPS® visual quality is based on Military Standard 105E, using simple sampling with level III of General Inspection.
- AR CAPS® have an expiration date of 2.5 years from the manufacturing date, provided they are stored and handled in their original packaging, in places with temperatures between 59°F (15°C) and 77°F (25°C), and relative humidity levels between 50% and 70%.

TABLE N° 1 EMPTY CAPSULES WEIGHT

SIZE	CAPSULE WEIGHT (mg)*
00E	143.0 ± 5
00	136.0 ± 7
0E	119.0 ± 6
0	105.0 ± 6
1	79.0 ± 5
2	63.0 ± 4
3	50.0 ± 3
4	40.0 ± 3

* The specifications limits are for the average capsule weight. Body represents approximately 60% of the capsule weight.

TABLE N° 2 INDIVIDUAL LENGTHS

SIZE	CAP		BODY	
	(mm)	(inches)	(mm)	(inches)
00E	13.00 ± 0.35	0.510 ± 0.014	22.35 ± 0.35	0.879 ± 0.014
00	11.80 ± 0.35	0.464 ± 0.014	20.10 ± 0.35	0.791 ± 0.014
0E	11.73 ± 0.35	0.461 ± 0.014	20.19 ± 0.35	0.794 ± 0.014
0	10.85 ± 0.35	0.427 ± 0.014	18.35 ± 0.35	0.722 ± 0.014
1	9.85 ± 0.35	0.388 ± 0.014	16.40 ± 0.35	0.645 ± 0.014
2	8.80 ± 0.35	0.346 ± 0.014	15.15 ± 0.35	0.596 ± 0.014
3	8.00 ± 0.35	0.315 ± 0.014	13.45 ± 0.35	0.529 ± 0.014
4	7.20 ± 0.35	0.283 ± 0.014	12.10 ± 0.35	0.476 ± 0.014

These parameters are only for in process control purposes and are not acceptance/rejection criteria.

TABLE N° 3 JOINING LENGTH OF THE LOCKED CAPSULES

SIZE	CLOSED CAPSULE	
	(mm)	(inches)
00E	25.30 ± 0.30	1.000 ± 0.012
00	23.40 ± 0.30	0.921 ± 0.012
0E	23.20 ± 0.30	0.913 ± 0.012
0	21.60 ± 0.30	0.850 ± 0.012
1	19.40 ± 0.30	0.764 ± 0.012
2	17.60 ± 0.30	0.693 ± 0.012
3	15.70 ± 0.30	0.618 ± 0.012
4	14.30 ± 0.30	0.563 ± 0.012

The joining length of the locked capsules can vary with fill material and filling machine adjustment. These parameters are only for in-process control purposes and are not acceptance / rejection criteria.

TABLE N° 4 EXTERNAL DIAMETER

SIZE	CAP		BODY	
	(mm)	(inches)	(mm)	(inches)
00E	8.58	0.338	8.25	0.325
00	8.56	0.337	8.23	0.324
0E	7.65	0.301	7.35	0.289
0	7.65	0.301	7.35	0.289
1	6.96	0.274	6.63	0.261
2	6.39	0.252	6.12	0.241
3	5.85	0.230	5.60	0.220
4	5.33	0.210	5.08	0.200

These parameters are only for in process control purposes and are not acceptance/rejection criteria.

TABLE N° 5 APPROXIMATE CONTENT OF A FILLED CAPSULE, IN mg

SIZE	DENSITY			
	0.6 g/ml	0.8 g/ml	1.0 g/ml	1.2 g/ml
00E	612	816	1.020	1.224
00	570	760	950	1.140
0E	462	616	770	924
0	408	544	680	816
1	288	384	480	576
2	216	288	360	432
3	162	216	270	324
4	120	160	200	240

TABLE No. 6 MICROBIOLOGICAL QUALITY OF THE CAPSULE

PARAMETER	SPECIFICATION
Total aerobic microbial count	NMT 1000 CFU / g
Salmonella Species	Absence /10 g
Escherichia coli	Absence /1 g
Pseudomonas Aeruginosa	Absence /1 g
Staphylococcus Aureus	Absence /1 g
Total Combined Yeast and Molds Count	NMT 100 CFU /g

TABLE No. 7 VISIBLE DEFECTS

CRITICAL	MAJOR	MINOR
Foreign material	Dirty capsule	Bubbles
Hole	Punched end	Spot
Closed capsule	Chipped cap or body (major)	Chipped cap or body (minor)
Cracked	Thin spot	Inside dirty end
Sticking capsule	String (major)	Wrinkle
Trim	Double cap	Star end
Double dip	Loose piece	String (minor)
Short body	Bad dip	Line in end
Uncut	Rough cut (major)	Vegetable clot
Mashed capsule	Bad join	Scraping
Long cap or body	Lateral corrugation	Collect pinch
	Short cap	Particle inside the capsule
	Long joining	Black speck
		Uneven cut
		Rough cut (minor)

TABLE No. 8 PRINT DEFECTS

CRITICAL	MAJOR	MINOR
Foreign material	Smearred Imprint (legible)	Ink spot (minor)
Unprinted	Partial Imprint (missing or cut off)	Off-center misplaced (minor)
Smearred Imprint (not legible)	Off-center (misplaced printing)	Partial Imprint (minor)
		Roller mark
		Poor ink cover-up
		Print line
		Multiple print (legible)
		Light and dark imprint



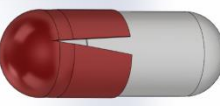



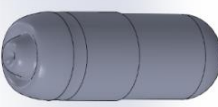
TABLE No. 9 ACCEPTABLE QUALITY LEVELS (AQL)

TYPE OF DEFECT	UNPRINTED CAPSULES (AQL)	PRINTED CAPSULES (AQL)
CRITICAL	0.010	0.010
MAJOR	0.040	0.065
MINOR	0.250	0.650

TABLE No. 10 ACCEPTANCE – REJECTION LEVELS (AQL)

TYPE OF DEFECT	SIZE OF CAPSULE SAMPLE	UNPRINTED CAPSULES		PRINTED CAPSULES	
		# Acceptance	# Rejection	# Acceptance	# Rejection
CRITICAL	1250	0	1	0	1
MAJOR	1250	1	2	2	3
MINOR	1250	7	8	14	15

TABLE N° 11: CLASIFICACION OF VISIBLE DEFECTS

	<p>Hole: Perforation on the capsule surface. Considered as a critical defect.</p>
	<p>Short body: Length of body is 1.5 mm shorter than the specified.</p>
	<p>Split: Pronounced fissure greater than 1.0 mm.</p>
	<p>Long body: Length of body is 1.0 mm greater than the specified length.</p>
	<p>Rough cut: Irregular cut in a dented form or pronounced sinuosities (greater than 1 mm) on the edges of cap and body.</p>
	<p>Short cap: Length of cap is 1.0 mm shorter than the specified length.</p>
	<p>Punched end major: Flat dome. It compromises the shoulder of the cap or body. Punched end minor: Flat dome without affection of the cap or body shoulder.</p>







	<p>Collect pinches: pronounced nips or folds greater than 3.0 mm of length in capsules of sizes “000”-“1” and greater than 2.0 mm of length in capsules of sizes “2”-“4”.</p>
	<p>Wrinkles: Wrinkles greater than 3 x 2 mm on the capsule ring or along the cap or body.</p>
	<p>String: Small threads appearing as a result of an inadequate cutting. They are greater than 3.0 mm of length in capsules of sizes “000”-“1” and greater than 2.0 mm of diameter in capsules “2”-“4”.</p>
	<p>Star end: Stellated wrinkles on the dome in a slight or pronounced way greater than 4.0 mm of diameter in capsules of sizes “000”-“1” and greater than 3.0 mm of diameter in capsules “2”-“4”.</p>
	<p>Bubble: Air spaces considered as a minor defect when having a diameter of 1 mm or more.</p>
	<p>Specks: Stain or dot of a different color on the surface of the capsule.</p>

TABLE N° 12 COLOR CODING OF CAPSULES

COLOR	CODE
Natural	1-0
Amethyst	2-XXX
Black	3-XXX
Blue	4-XXX
Brown	5-XXX
Buff	6-XXX
Caramel	7-XXX
Flesh	8-XXX
Grey	9-XXX
Green	10-XXX
Orange	14-XXX
Pink	15-XXX
Purple	16-XXX
Red	17-XXX
Scarlet	18-XXX
Yellow	19-XXX
White	20-XXX
Silver	21-XXX
Gold	22-XXX

Code: The first number corresponds to the color of the capsules and XXX is a consecutive number.

TABLE No. 13 PACKAGING STANDARDS FOR AR-CAPS®

SIZE	QUANTITY (Capsules / Box)
00E	65.000
00	75.000
0R	90.000
0	100.000
1	125.000
2	175.000
3	200.000
4	250.000


Note: As specifications are under continuous review, be sure to contact your sales representative for the most up-to-date technical information.



The capsules are packaged in anti-static plastic bags which provide a protection barrier against moisture and corrugated cartons for the secure storage and transportation of the capsule. This packaging material allows the protection of the physic chemical and microbiological characteristics of the product provided the storage under the specified conditions of temperature and relative humidity.

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Name/Position: **Leonardo De la Hoz P. / Quality Assurance Manager**

Signature: 

Certificate code: A016-10