

宁波众高密封科技有限公司

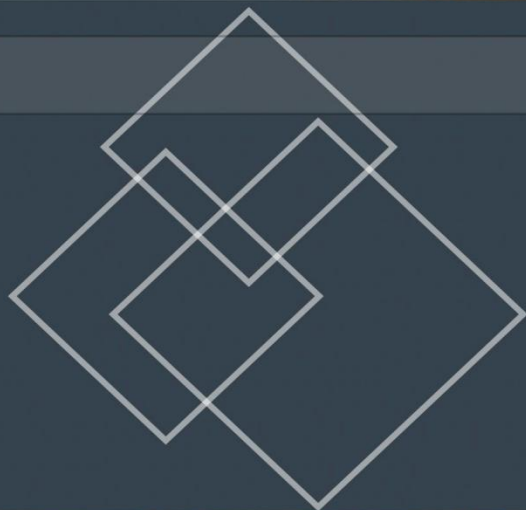
N I N G B O Z H O N G G A O S E A L T E C H O N L O G Y C O . , L T D



公众号



VR场景



○型圈 (O-rings)



○型密封圈 (O-rings) 是一种截面为圆形的橡胶密封圈，因其截面为○型，故称其为○型橡胶密封圈。开始出现在19世纪中叶，当时用它作蒸汽机汽缸的密封元件。因为价格便宜，制造简单，功能可靠，并且安装要求简单，○形环是最常见的密封用机械设计。○形环承受几十兆帕斯卡（千磅）的压力。○形环可用于静态的应用中，也可以用在部件之间有相对运动的动态应用中，例如旋转泵的轴和液压缸活塞。

应用领域

O形密封圈适用于装在各种机械设备上，在规定的温度、压力、以及不同的液体和气体介质中，于静止或运动状态下起密封作用。在机床、船舶、汽车、航空航天设备、冶金机械、化工机械、工程机械、建筑机械、矿山机械、石油机械、塑料机械、农业机械、以及各类仪器仪表上，大量应用着各种类型的密封元件。O型密封圈主要用于静密封和往复运动密封。用于旋转运动密封时，仅限于低速回转密封装置。





横截面图

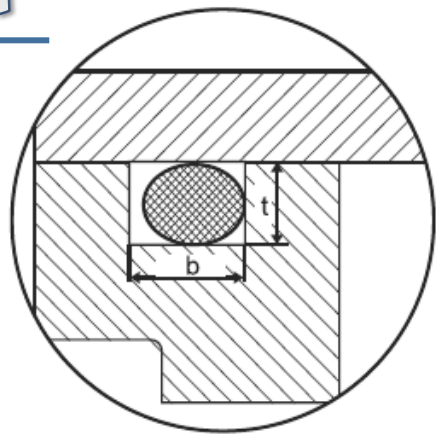


图1

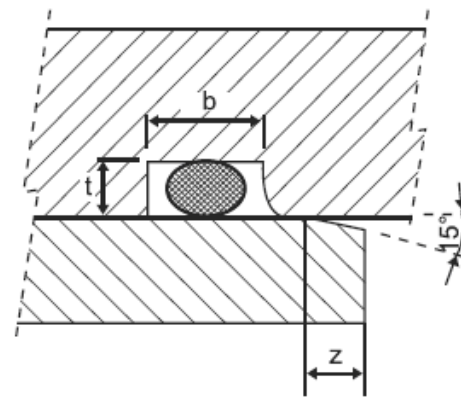
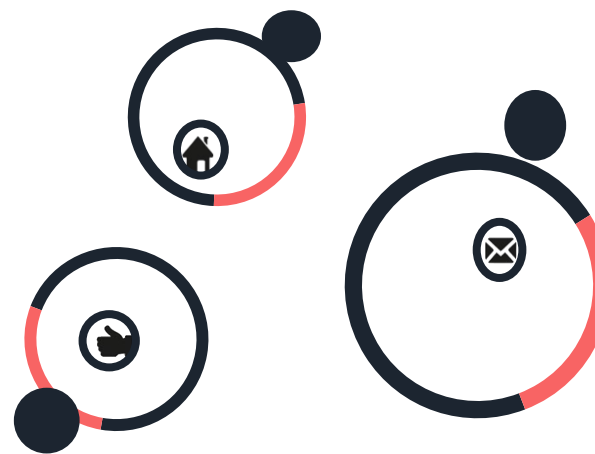
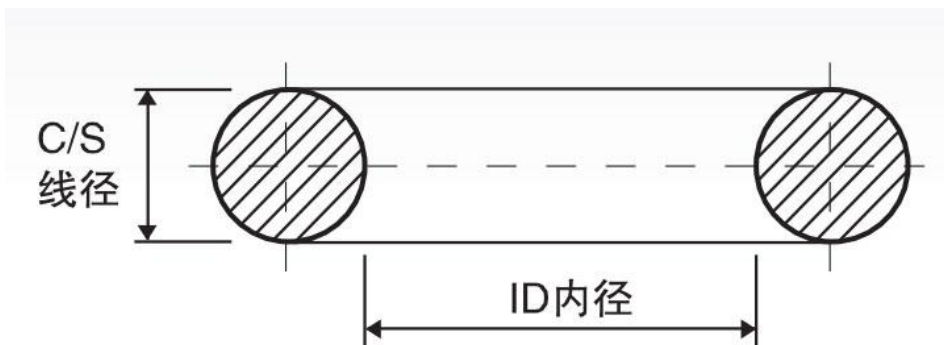


图2





规格参数表

O型圈公差标准表
Table Of O Ring Stanfard Tolerance

内径 (ID)	公差 (±)	内径 (ID)	公差 (±)	内径 (ID)	公差 (±)
0-1.79	0.12	34.51-36.50	0.38	75.01-77.50	0.67
1.80-2.80	0.13	36.51-37.50	0.39	77.51-80.00	0.69
2.81-4.00	0.14	37.51-38.70	0.40	80.01-82.50	0.71
4.01-5.30	0.15	38.71-40.00	0.41	82.51-85.00	0.72
5.31-7.10	0.16	40.01-41.20	0.42	85.01-87.50	0.74
7.11-8.50	0.17	41.21-42.50	0.43	87.51-90.00	0.76
8.51-9.75	0.18	42.51-45.00	0.44	90.01-92.50	0.77
9.76-11.80	0.19	45.01-46.20	0.45	92.51-95.00	0.79
11.81-13.20	0.21	46.21-47.50	0.46	95.01-97.50	0.81
13.21-15.00	0.22	47.51-48.70	0.47	97.51-100.00	0.82
15.01-16.00	0.23	48.71-50.00	0.48	100.01-103.00	0.85
16.01-17.00	0.24	50.01-51.50	0.49	103.01-106.00	0.87
17.01-19.00	0.25	51.51-53.00	0.50	106.01-109.00	0.89
19.01-20.60	0.26	53.01-54.50	0.51	109.01-112.00	0.91
20.61-21.20	0.27	54.54-56.00	0.52	112.01-115.00	0.93
21.21-22.40	0.28	56.01-58.00	0.54	115.01-118.00	0.95
22.41-23.60	0.29	58.01-60.00	0.55	118.01-122.00	0.97
23.61-25.00	0.30	60.01-61.50	0.56	122.01-125.00	0.99
25.01-26.50	0.31	61.51-63.00	0.57	125.01-128.00	1.01
26.51-28.00	0.32	63.01-65.00	0.58	128.01-132.00	1.04
28.01-29.00	0.33	65.01-67.00	0.60	132.01-136.00	1.07
29.01-30.00	0.34	67.01-69.00	0.61	136.01-140.00	1.09
30.01-31.50	0.35	69.01-71.00	0.63	140.01-142.50	1.11
31.51-33.50	0.36	71.01-73.00	0.64	142.51-145.00	1.13
33.51-34.50	0.37	73.01-2.80	0.65	145.01-147.50	1.14

内径 (ID)	公差 (±)	内径 (ID)	公差 (±)	内径 (ID)	公差 (±)
147.51-150.00	1.16	283.01-286.00	2.05	470.01-475.00	3.25
150.01-152.50	1.18	286.01-290.00	2.08	475.01-479.00	3.28
152.51-155.00	1.19	290.01-295.00	2.11	479.01-483.00	3.30
155.01-157.50	1.21	295.01-300.00	2.14	483.01-487.00	3.33
157.51-160.00	1.23	300.01-303.00	2.16	487.01-493.00	3.36
160.01-162.50	1.24	303.01-307.00	2.19	493.01-500.00	3.41
162.51-165.00	1.26	307.01-311.00	2.21	500.01-508.00	3.46
165.00-167.50	1.28	311.01-315.00	2.24	508.01-515.00	3.50
167.51-170.00	1.29	315.01-320.00	2.27	515.01-523.00	3.55
170.01-172.50	1.31	320.01-325.00	2.30	523.01-530.00	3.60
173.51-175.00	1.33	325.01-330.00	2.33	530.01-538.00	3.65
175.01-177.50	1.34	330.01-335.00	2.36	538.01-545.00	3.69
177.51-180.00	1.36	335.01-340.00	2.40	545.01-553.00	3.74
180.01-182.50	1.38	340.01-345.00	2.43	553.01-560.00	3.78
182.51-185.00	1.39	345.01-350.00	2.46	560.01-570.00	3.85
185.01-187.50	1.41	350.01-355.00	2.49	570.01-580.00	3.91
187.51-190.00	1.43	355.01-360.00	2.52	580.01-590.00	3.97
190.01-195.00	1.46	360.01-365.00	2.56	590.01-600.00	4.03
195.01-200.00	1.49	365.01-370.00	2.59	600.01-608.00	4.08
200.01-203.00	1.51	370.01-375.00	2.62	608.01-615.00	4.12
203.01-206.00	1.53	375.01-379.00	2.64	615.01-623.00	4.17
206.01-212.00	1.57	379.01-383.00	2.67	623.01-630.00	4.22
212.01-218.00	1.61	383.01-387.00	2.70	630.01-640.00	4.28
218.01-224.00	1.65	387.01-391.00	2.72	640.01-650.00	4.34
224.01-227.00	1.67	391.01-395.00	2.75	650.01-660.00	4.40
227.01-230.00	1.69	395.01-400.00	2.78	660.01-670.00	4.47
230.01-236.00	1.73	400.01-406.00	2.82		
236.01-239.00	1.75	406.01-412.00	2.85		
239.01-243.00	1.77	412.01-418.00	2.89		
243.01-250.00	1.82	418.01-425.00	2.93		
250.01-254.00	1.84	425.01-429.00	2.96		
254.01-258.00	1.87	429.01-433.00	2.99		
258.01-261.00	1.89	433.01-437.00	3.01		
261.01-265.00	1.91	437.01-443.00	3.05		
265.01-268.00	1.92	443.01-450.00	3.09		
268.01-272.00	1.96	450.01-456.00	3.13		
272.01-276.00	1.98	456.01-462.00	3.17		
276.01-280.00	2.01	462.01-466.00	3.19		
280.01-283.00	2.03	466.01-470.00	3.22		

线径 (C/S)	公差 (±)
0-1.79	0.07
1.80-2.64	0.08
2.65-3.54	0.09
3.55-5.29	0.10
5.30-6.99	0.13
7.00-8.00	0.15
8.01-10.00	0.20
10.01-15.00	0.25
15.01-25.00	0.35
25.01-100.00	0.45

规格参数表

O型圈/星型圈/包覆O型圈开槽尺寸建议参数 (静态见图1)

Table Of O Ring / X Ring / FEP Slotting Dimension

密封圈线径 C/S	槽深 T	槽宽 B	密封圈线径 C/S	槽深 T	槽宽 B
1.00	0.80	1.3	5.00	4.00	6.5
1.50	1.10	1.9	5.33	4.30	6.9
1.60	1.20	2.1	5.50	4.50	7.1
1.78	1.30	2.3	5.70	4.65	7.4
1.90	1.40	2.4	6.00	4.95	7.8
2.00	1.50	2.6	6.50	5.40	8.4
2.40	1.80	3.1	6.99	5.85	9.1
2.50	1.90	3.2	7.00	5.85	9.1
2.62	2.00	3.4	7.50	6.30	9.7
2.70	2.10	3.5	8.00	6.75	10.4
3.00	2.30	3.9	8.40	7.15	10.9
3.50	2.70	4.5	8.50	7.25	11.0
3.53	2.70	4.5	9.00	7.70	11.7
3.60	2.80	4.7	9.50	8.20	12.3
4.00	3.15	5.2	10.00	8.65	13.0
4.50	3.60	5.8	-	-	-

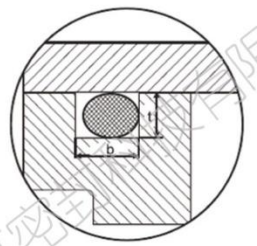


图1

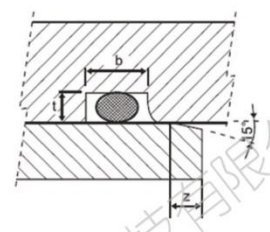


图2

O型圈/星型圈/包覆O型圈以液体作介质时 Liquid as Medium (动态见图2)

线径	槽深	槽宽	轴杆导角	线径	槽深	槽宽	轴杆导角
1.00	0.90	1.3	1.0	5.00	4.45	6.0	2.5
1.50	1.30	1.9	1.0	5.33	4.70	6.4	2.7
1.60	1.40	2.0	1.1	5.50	4.95	6.6	2.8
1.78	1.50	2.3	1.1	5.70	5.10	6.9	3.0
1.90	1.60	2.4	1.2	6.00	5.40	7.2	3.1
2.00	1.70	2.4	1.2	6.50	5.80	7.8	3.3
2.40	2.10	2.9	1.4	6.99	6.30	8.4	3.6
2.50	2.20	3.0	1.4	7.00	6.30	8.4	3.6
2.62	2.30	3.1	1.5	7.50	6.70	9.0	3.8
2.70	2.40	3.2	1.5	8.00	7.20	9.6	4.0
3.00	2.60	3.6	1.6	7.40	7.60	10.1	4.2
3.50	3.10	4.2	1.8	8.50	7.70	10.2	4.2
3.53	3.10	4.2	1.8	9.00	8.20	10.8	4.3
3.60	3.20	4.3	1.8	9.50	8.60	11.4	4.4
4.00	3.50	4.8	2.0	10.00	9.10	12.0	4.5
4.50	4.00	5.4	2.3	-	-	-	-

O型圈/星型圈/包覆O型圈以气体作介质时 Gas as Medium (动态见图2)

线径 C/S	槽深 T	槽宽 B	轴杆导角 Z	线径 C/S	槽深 T	槽宽 B	轴杆导角 Z
1.00	0.95	1.3	1.0	5.00	4.65	6.0	2.5
1.50	1.35	1.9	1.0	5.33	4.95	6.4	2.7
1.60	1.45	2.0	1.1	5.50	5.15	6.6	2.8
1.78	1.55	2.3	1.1	5.70	5.35	6.9	3.0
1.90	1.75	2.4	1.2	6.00	5.65	7.2	3.1
2.00	1.80	2.4	1.2	6.50	6.10	7.8	3.3
2.40	2.15	2.9	1.4	6.99	6.60	8.4	3.6
2.50	2.25	3.0	1.4	7.00	6.60	8.4	3.6
2.62	2.35	3.1	1.5	7.50	7.10	9.0	3.8
2.70	2.45	3.2	1.5	8.00	7.60	9.6	4.0
3.00	2.75	3.6	1.6	8.40	7.90	10.1	4.2
3.50	3.25	4.2	1.8	8.50	8.00	10.2	4.2
3.53	3.25	4.2	1.8	9.00	8.50	10.8	4.3
3.60	3.35	4.3	1.8	9.50	9.00	11.4	4.4
4.00	3.70	4.8	2.0	10.00	9.50	12.0	4.5
4.50	4.20	5.4	2.3	-	-	-	-

规格参数表

O型圈/星型圈/包覆O型圈材料物性表










Table Of O Ring / X Ring / FEP Material and Chemical Compatibility

材质名称 物性等级 物性要求	丁腈橡胶 NBR(N)	氢化丁腈橡胶 HNBR(H)	三元乙丙橡胶 EPDM(E)	硅矽橡胶 VMQ(S)	氯丁橡胶 CR(C)	氟素橡胶 FKM(V)	四丙氟橡胶 AFLAS(L)	氟硅橡胶 FVMQ(F)	全氟橡胶 FFKM(K)	聚四氟乙烯 PTFE(F)	聚氨酯 PU(U)	天然橡胶 NR(R)	丙烯酸酯 ACR(A)
抗臭氧性	△	○	○	○	○○	○	○	○	○	○	○	×	○
耐候性	○	○	○	○	○	○	○	○	○	○	○	×	○
抗热性	120℃	150℃	150℃	220℃	120℃	200℃	175℃	175℃	320℃	280℃	90℃	90℃	150℃
耐化学药品性	○△	○	○	○○	○△	○	○	○	○	○	○	×	×
耐油性	○	○	×	○△	○△	○	○○	○	○	○	○	×	○
密水性	○	○	○	○	○	○	○	△	○	○	○	○	○
耐寒性	-40℃	-40℃	-50℃	-70℃	-40℃	-20℃	-30℃	-60℃	-20℃	-100℃	-40℃	-60℃	-25℃
耐磨损性	○	○○	○	×	○	○○	○○	×	○	○	○	○	△
抗变形性	○○	○	○○	○	△	○	○	○	○	×	×	○○	△
耐酸性	△	○	○○	△	○△	○	○	○	○	○	×	○△	△×
耐碱性	○	○	○	△	○○	○○	○	△	○	○	×	△	×
张力强度	○○	○	○○	×	○○	○○	○○	○	○	△×	○	○	△
耐水蒸气性	×	○△	○○	○△	△	○△	○	○△	○	○	×	△	×
抗燃性	×	×	×	△×	○	○	○	△×	○	○	△	×	△×
储存稳定性(Y=年)	5-10Y	5-10Y	5-10Y	ABT20Y	5-10Y	ABT20Y	ABT20Y	ABT20Y	ABT20Y	ABT20Y	ABT20Y	3-5Y	ABT20Y

图标说明: ○特佳 ○佳 △普通 ×差

常用材料参考色

Frequently Used Color Form








								
红色	橙色	黄色	绿色	蓝色	灰色	紫色	棕色	牛奶色
标准色号(PANTONE)								
187C	1665C	7404U	3298C	280C	431C	2665U	4975C	Warm Gray 1C

O型圈失效形式与对策

在O型圈使用过程会出现由于选型不当、沟槽尺寸设计不合理或安装不当等原因造成O型圈的失效，作为售后人员必需能够根据O型圈失效的形式判定出造成失效的原因，并制定出相应的解决措施。

下表为密封圈常见的失效形式与原因分析，供参考使用

现象	照片	描述	造成原因	解决方法
安装损伤		密封件部分或全部呈现整齐伤口	1.沟槽等部件边缘锐利 2.沟槽设计不合理 3.密封件尺寸不适 4.密封件硬度或弹性过低 5.密封件表面有污物	清除锋利边角 沟槽设计更加合理 选择合适尺寸的密封件 选择弹性更大硬度高的密封件 安装时注意清除污物
密封件卷曲		密封件呈现明显卷曲	1.安装错误 2.材料太硬或弹性太小 3.O型圈表面处理不均匀 4.沟槽尺寸不均匀 5.沟槽表面粗糙	正确安装 选择高弹性的材料 涂抹润滑脂尽量均匀 保证沟槽的加工质量 提高沟槽表面光洁度
过度压缩		密封件接触面呈现平面变形，并可能伴随裂纹	1.设计时未考虑材料由于热量及化学介质引起的变形	沟槽设计时应当考虑材料由于温度及化学介质引起的变形
挤出		密封件有粗糙破损的边缘，一边出现在压力低的一侧	1.间隙过大 2.材料弹性或硬度太低 3.沟槽空间太小 4.沟槽边角过于锋利 5.密封件尺寸不合适	选择合适的间隙 选择高硬度或高弹性的材料 合理的沟槽设计 合理设计倒角 选择合适的密封件
永久压缩变形		密封件表面呈现永久压缩变形	1.压力过大 2.温度过高 3.材料没有完成硫化处理 4.材料本身永久变形率过高 5.材料在化学介质中过度膨胀	选择低变形率的材料 保证密封件材料的质量 确认材料与介质是否兼容

化学腐蚀		化学腐蚀可能引起的各种缺陷：如发泡、破裂、穿孔或褪色等	1.材料与化学介质不兼容	选择更耐化学介质的材料
热腐蚀		高温接触表面呈现径向裂纹；有的材料会变软或变得有光泽	1.材料不能承受高温或温度超出预计温度	选择更耐高温的材料
磨损		密封件全部或部分区域产生磨损；可以在密封件表面找到磨损的颗粒	1.密封表面光洁度不够 2.密封环境进入磨损性强的污物	保证沟槽的光洁度 改善造成磨损的部件和环境
压力爆破		密封件表面呈现气泡凹坑和疤痕	1.材料的硬度或弹性过低	选择高弹性的材料
电腐蚀		密封件褪色同时有粉末状物质留在表面，与介质无接触一侧有腐蚀痕迹	1.化学反应产生电解腐蚀	选择与介质相适合的材料
气体析出		此缺陷通常较难检测通常表现为截面尺寸减小	1.材料硫化处理不当 2.使用了有增塑剂的材料	确认材料经过正确的硫化处理 避免使用有增塑剂的材料
污染		密封件截面有异物	1.材料受到腐蚀或产生反应	按照要求的清洁度进行包装



宁波众高密封科技有限公司

Ningbo ZhongGao Seal Technology Co., Ltd.

公司简介



宁波众高密封科技有限公司是集设计，生产，销售，经销为一体的专业密封原件制造商，工厂位于江西，深圳，目前拥有9000多平米的现代化厂房，拥有员工300余人，资深技术人员40余人



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我们拥有从硫化成型到最终出货的全套先进生产设备，采用与国际标准相同的先进生产工艺，配有较齐全的实验检测设备，能对各种橡胶材料物性、产品性能进行较全面的实验和检测。我们拥有最专业的技术团队能整合您的密封方案提供最专业的建议。



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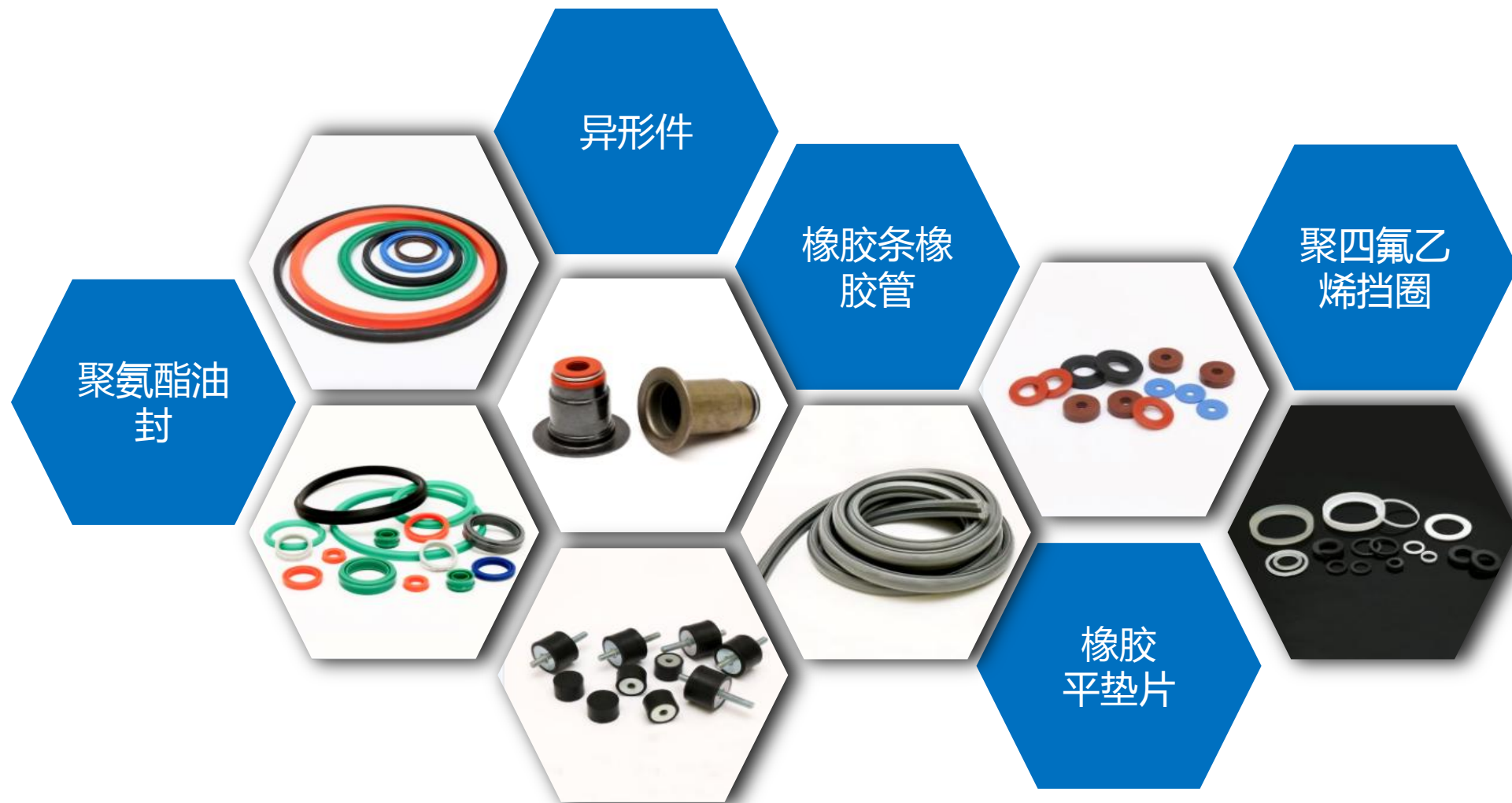
公司主要产品有：O型圈，星型圈，Y型圈，D型圈，橡胶平垫，ED圈，橡胶胶条，橡胶球，各类骨架油封，格来圈斯特封，聚氨酯油封，气动密封以及按照客户需求设计的各类橡胶杂件。



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产品主要为汽车，园林灌溉设备，液压，气动，煤矿机械，医疗，五金，卫浴，饮水设备等行业进行专业的配套服务。

权威认证

Authoritative certification

s & Chevron Seals



KTW W270

KTW (德国饮用水行业非金属部件的检测实验认可)代表德国联邦健康部门饮用水系统选材与健康评估权威部门,它是德国DVGW的实验室。KTW是2003成立的强制监管机关。要求供应商符合DVGW (德国气体与水协会)的第W 270项条例“微生物在非金属材料上的传播”。这个标准主要保护饮用水不受生物杂质污染。W 270目前也是法律规定的执行规范。KTW测试的标准是EN681-1, W270的测试标准就是W270。目前所有出口欧洲的饮用水系统及辅料都必须出具KTW认证。因此,中国饮用水系统及辅料如果想要出口到欧洲国家,必须通过KTW认证。KTW已经获得世界卫生组织(WHO)对饮用水安全认证规范的权威认定。

REACH

REACH是欧盟规章《化学品注册、评估、许可和限制》(REGULATION concerning the Registration, Evaluation, Authorization and Restriction of Chemicals)的简称,是欧盟建立的,并于2007年6月1日起实施的化学品监管体系。这是一个涉及化学品生产、贸易、使用安全的法规提案,法规旨在保护人类健康和环境安全,保持和提高欧盟化学工业的竞争力,以及研发无毒无害化合物的创新能力,防止市场分裂,增加化学品使用透明度,促进非动物实验,追求社会可持续发展等。REACH指令要求凡进口和在欧洲境内生产的化学品必须通过注册、评估、授权和限制等一组综合程序,以更好更简单地识别化学品的成分来达到确保环境和人体安全的目的。

WRAS(Water Research Advisory Scheme)认证是指水务法规咨询计划,WRAS是英国饮用水安全方面的认证。Intertek China、WRC-NSF及KIWA-UK是WRAS认可的实验室!

水务法规咨询计划(WRAS)是英国水工业的认证计划,由此计划认可的产品显示了它符合1999年供水系统(水配件)的法规和其修订版的要求。

计划的主要目标是避免水的:浪费 误用 滥用 不当的消费,不精确度量或污染物。

此项认证是通往英国市场的必须许可,虽非强制,但已是惯例,大凡水公司在提供水源时必须验收的手续之一是查看是否有符合相关标准要求的认证,WRAS的认可是最有说服力的证明,没有的将没有供水资格。



美国食品和药物管理局(Food and Drug Administration)简称FDA, FDA是美国政府在健康与人类服务部(DHHS)和公共卫生部(PHS)中设立的执行机构之一。作为一家科学管理机构, FDA的职责是确保美国本国生产或进口的食品、化妆品、药物、生物制剂、医疗设备和放射产品的安全。它是最早以保护消费者为主要职能的联邦机构之一。



watermark是澳大利亚标准局(Standards Australia Limited)的认证标志。认证的产品包括水龙头、各种水阀、水管、水箱配件、花洒、浴缸、管接头等供水、排污类产品。WATERMARK是由独立认证机构所提供的产品质量认证,它确保产品符合澳洲相关的卫浴法规以及产品标准。根据澳洲的卫浴法规,所有在澳洲安装的卫浴产品需要强制进行此项认证。



LFGB认证,又称《食品、烟草制品化妆品和其它日用品管理法》是德国食品卫生管理方面最重要的基本法律文件,是其它专项食品卫生法律、法规制定的准则和核心。但是近年来也有所修改,主要是和欧洲标准相匹配。



RoHS是由欧盟立法制定的一项强制性标准,它的全称是《关于限制在电子电器设备中使用某些有害成分的指令》(Restriction of Hazardous Substances)。该标准已于2006年7月1日开始正式实施,主要用于规范电子电气产品的材料及工艺标准,使之更加有利于人体健康及环境保护。该标准的目的在于消除电机电子产品中的铅、汞、镉、六价铬、多溴联苯和多溴二苯醚共6项物质,并重点规定了铅的含量不能超过0.1%。



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ISOTS16949



Test Report No. NGBEC1300495001 Date: 18 Apr 2013 Page 1 of 12
(SVHC)

NINGBO ZHONGGAO SEAL TECHNOLOGY CO. LTD
ROOM 910, BUILDING 311, JIANGNAN-YIPIN GARDEN, HI-TECH ZONE, NINGBO, CHINA

The following sample(s) was/were so certified and identified on behalf of the clients as: NBR O-ring

SGS Job No: NP13-000467-NB

Date of Sample Received: 07 Apr 2013

Testing Period: 07 Apr 2013 - 18 Apr 2013

Test Requested: As requested by client, SVHC screening is performed according to (i) One Hundred and thirty eight (138) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Dec 19, 2012 regarding Regulation (EC) No 1907/2006 concerning the REACH.

Test Results: Please refer to next page(s).

Summary:

According to the specified scope and analytical techniques, concentrations of tested SVHC are ≤ 0.1% (w/w) in the submitted sample.	PASS
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Signed for and on behalf of
SGS-CSTC Ltd.

Iris Xiao
Iris Xiao
Approved Signatory

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Test Report No. NGBEC1300495001 Date: 18 Apr 2013 Page 2 of 12
(SVHC)

Remark:

(1) The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
<http://echa.europa.eu/web/guest/candidate-list-table>
These lists are under evaluation by ECHA and may subject to change in the future.

(2) Concerning article(s):
In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totalling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

SGS adopts the interpretation of ECHA for SVHC in article unless indicated otherwise. Detail explanation is available at the following link:
http://webstg.cdn.sgs.net/comreach/documents/SGS-CTS_SVHC-paper-EN-11.pdf

(3) Concerning material(s):
Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No 1907/2006.

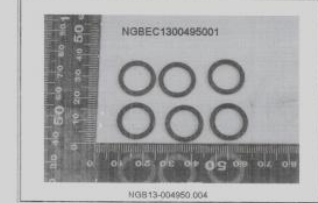
(4) Concerning substance and preparation:
If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1372/2008 and No 790/2009, client is suggested to prepare a Safety Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC)

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Test Report No. NGBEC1300495001 Date: 18 Apr 2013 Page 12 of 12
(SVHC)

Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

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Reach 英文版1

Reach 英文版2

Reach 英文版12