



345 Carlingview Drive
Toronto, Ontario M9W 6N9
Tel.: 416 734 3300
Fax: 416 231 1626
Toll Free: 1.877.682.8772

www.tssa.org

March 30, 2017

SCOTT ISLIP
ROUND ENGINEERING INC
10 SEGWUN RD
WATERDOWN ON L0R 2H8
CA

Service Request Type: BPV-Fitting Registration

Service Request No.: 2050280

Your Reference No.: R-0737

Registered to: CRYOVATION LLC

Dear SCOTT ISLIP,

Technical Standards and Safety Authority (TSSA) is pleased to inform you that your submission has been reviewed and registered as follows:

CRN No.: 0H19273.5

Main Design No.: Dwg. No. 3046-SPEC Rev. 0, Ambient Vaporizer, High Pressure Fabrication Specification

Expiry Date: 30-Mar-2027

Please be advised that a valid quality control system must be maintained for the fitting registration to remain valid until the expiry date.

The stamped copy of the approved registration and the invoice are mailed separately. Should you have any questions or require further assistance, please contact a Customer Service Advisor at 1.877.682.TSSA (8772) or e-mail customerservices@tssa.org. We will be happy to assist you. When contacting TSSA regarding this file, please refer to the Service Request number provided above.

Yours truly,



Mark Valcic P. Eng.
Engineer Specialist BPV
Tel.: 416-734-3494
Fax: 416-231-1626
Email: mvalcic@tssa.org



TECHNICAL STANDARDS & SAFETY AUTHORITY
 14th Floor, Centre Tower
 3300 Bloor Street West
 Toronto, Ontario
 Canada M8X 2X4

Show facsimile of manufacturer's logo or trademark, as it will appear on the fitting, in the space below



STATUTORY DECLARATION
Registration of Fittings

I, ROBERT L. LEONARD, DIRECTOR OF QUALITY CONTROL
(Name and Position, e.g. President, Plant Manager, Chief Engineer)

of CRYOVATION, LLC
(Name of Manufacturer)

Located at 9B MARY WAY, HAINESPORT, NJ 08036 609-619-5734
(Plant Address) (Telephone No.) (Fax No.)

do solemnly declare that the fittings listed hereunder, which are subject to the **Technical Standards and Safety Act**, Boilers and Pressure Vessels Regulation, comply with all of the requirements of ASME B31.3

(Title of recognized North American Standard)

which specifies the dimensions, materials of construction, pressure/temperature ratings, identification marking the fittings and service;

or are not covered by the provisions of a recognized North American standard and are therefore manufactured to comply with _____ as supported by the attached data which identifies the dimensions, material of construction, pressure/temperature ratings and the basis for such ratings, the marking of the fitting for identification and service.

I further declare that the manufacture of these fittings is controlled by a quality system meeting the requirements of CSA B51 ANNEX F which has been verified by the following authority, TUV RHEINLAND

The items covered by this declaration, for which I seek registration, are category H - VAPORIZER type fittings. In support of this application, the following information and/or test data are attached as follows:
SCOPE OF CRN, DRAWINGS, CALCULATIONS

(drawings, calculations, test reports, etc.)

Declared before me at 2:23 pm in the Afternoon of MARCH 23rd 2017

the 23rd day of MARCH AD 2017
CARLO J. CHINOSI

Commissioner for Oaths: **NOTARY PUBLIC OF NEW JERSEY**
 My Commission Expires June 9, 2020

CARLO CHINOSI Robert Leonard
(Printed name) (Signature)
Carlo Chinosi Robert Leonard
(Signature) (Signature of Declarer)

FOR OFFICE USE ONLY

To the best of my knowledge and belief, the application meets the requirements of the **Technical Standards and Safety Act**, Boilers and Pressure Vessels Regulation, and CSA Standard B51 and is accepted for registration in Category 'H'

CRN: OH19273.5
 Registered by: Manu Valcic, P.ENG.
 Dated: MARCH 30, 2017
 NOTE: This registration expires on March 30, 2027

Technical Standards and Safety Authority Boilers and Pressure Vessels Safety Program

REGISTERED
 C.R.N. OH19273.5
 Signed: Manu Valcic
 Date: MARCH 30, 2017

PV 09553 (06/04) NOTE: DWG. # 3046-SPEC VAPORIZER. Manu Valcic March 30/17



CRYOVATION, LLC
9B MARY WAY
HAINESPORT, NJ
08036, USA

23-Mar-17

Page 1 of 1

SCOPE OF CRN REGISTRATION

Product Description	Dwg. No.	Design Code	Inlet/Outlet (Note 1)	Material (Note 2)	Tubing Size	MAWP at MAWT	MDMT (F)
Ambient Vaporizer, High Pressure	3046-SPEC	ASME B31.3, 2016	1/2" FNPT	TYPE 304 UNS S30400, TYPE 316 UNS S31600	5/8" x 0.065" SMLS	3900 psig at 120F	-320F
					5/8" x 0.095" SMLS	5200 psig at 120F	-320F
					1/2" x 0.065" SMLS	5000 psig at 120F	-320F
					1/2" x 0.065" WLD	4000 psig at 120F	-320F

Note 1: Alternative inlet/outlet connections are acceptable as long as the inlet/outlet fittings used are complete with a CRN.

THIS IS PART OF
CRN 0119273.5
Technical Standards & Safety Authority
Boilers & Pressure Vessels
Safety Program
lethal M. 30/17



Bill of Materials

Item	Description	Material	Qty
A	FIN EXTRUSION 5/8" TUBE	8" OD X 5/8" ID X 10" LG. ALUMINUM P/N 3013-2385 - SEE SHEET 2	TABLE 2.0
	FIN EXTRUSION 1/2" TUBE	8" OD X 1/2" ID X 10" LG. ALUMINUM P/N 3013-2381 - SEE SHEET 2	TABLE 2.0
B,C	TUBING OPTION 1	5/8"x0.065" WALL SMLS ASTM A269 TP 304 UNS S30400 (NOTE 7)	TABLE 2.0
	TUBING OPTION 2	5/8"x0.095" WALL SMLS ASTM A269 TP 304 UNS S30400 (NOTE 7)	TABLE 2.0
	TUBING OPTION 3	1/2"x0.065" WALL SMLS ASTM A269 TP 304 UNS S30400 (NOTE 7)	TABLE 2.0
	TUBING OPTION 4	1/2"x0.065" WALL WLD ASTM A269 TP 304 UNS S30400 (NOTE 7)	TABLE 2.0
	TUBING OPTION 5	5/8"x0.065" WALL SMLS ASME SA-249 TP 304 UNS S30400	TABLE 2.0
	TUBING OPTION 6	5/8"x0.095" WALL SMLS ASME SA-249 TP 304 UNS S30400	TABLE 2.0
	TUBING OPTION 7	1/2"x0.065" WALL SMLS ASME SA-249 TP 304 UNS S30400	TABLE 2.0
	TUBING OPTION 8	1/2"x0.065" WALL WLD ASME SA-249 TP 304 UNS S30400	TABLE 2.0
D	FIN SPACER CROSS	5"X3" EXTRUSION ALUMINUM P/N 3013-2330 - SEE SHEET 2	TABLE 2.0
E	FIN SPACER	1-1/4"X3" EXTRUSION ALUMINUM P/N 3013-2331 - SEE SHEET 2	TABLE 2.0
F	FIN SPACER CROSS	5"X37" EXTRUSION ALUMINUM P/N 3013-2330 - SEE SHEET 2	TABLE 2.0
G	IN/OUT FITTINGS 5/8" TUBE	5/8" TUBE SW X 1/2" FNPT TYPE 316 SS CONNECTOR, PARKER P/N 10GW-SS (CRN 0A2205.5R2) OR EQUAL	2
	IN/OUT FITTINGS 1/2" TUBE	1/2" TUBE SW X 1/2" FNPT TYPE 316 SS CONNECTOR, PARKER P/N 8-8GW-SS (CRN 0A2205.5R2) OR EQUAL	2
H	LIFTING LUG	ALUMINUM P/N 3013-2595	2
J	LEGS	ALUMINUM, 5" X 37" LONG P/N 3013-2365	4
K	NAMEPLATE	ALUMINUM - SEE SHEET 3	1
L	CONNECTOR 5/8" TUBE	5/8" TUBE SW X SW TYPE 316 SS CONNECTOR, SWAGelok P/N SS-10TSW-6 (CRN 0A12577.5ADD4) OR EQUAL	TABLE 2.0
	CONNECTOR 1/2" TUBE	1/2" TUBE SW X SW TYPE 316 SS CONNECTOR, SWAGelok P/N SS-8TSW-6 (CRN 0A12577.5ADD4) OR EQUAL	

TABLE 1.0

MAX PRESSURE RATINGS	
TUBING	MAWP AT 120F
5/8" X 0.065" SMLS	3900 PSIG
5/8" X 0.095" SMLS	5200 PSIG
1/2" X 0.065" SMLS	5000 PSIG
1/2" X 0.065" WLD	4000 PSIG

TABLE 2.0

FIN MATRIX	RATING SCFH	ITEM QTY							
		"A"	"B"	"C"	"D"	"E"	"F"	"L"	" "
1 x 2	1300	2	1	1	0	3	2	2	
2 x 4	5000	8	4	3	9	24	4	6	
3 x 4	7500	12	6	5	18	30	4	10	
4 x 4	10,000	16	8	7	27	8	4	14	
4 x 5	12,500	20	10	9	36	8	4	18	
4 x 6	15,000	24	12	11	45	8	4	22	
5 x 6	18,000	30	15	14	60	8	4	28	
6 x 6	22,000	36	18	17	75	8	4	34	

THIS IS PART OF
 CRN 0419273.5
 Technical Standards & Safety Authority
 Boilers & Pressure Vessels
 Safety Program

W. W. W. March 30/17

FITTINGS

Dimensions are in inches. SI units if provided in brackets.
 Gasket bolt holes straddle the major centerlines specifically noted.
 Surfaces to be neat in appearance, free of slag or debris.
 Surfaces to be cleaned of scale, oil, weld splatter and dirt in matter prior to hydrostatic test.
 Hydrostatic test exempt.
 Manufacturer shall be authorized to manufacture fittings in accordance with CSA B51.
 All A269 tubing to be supplied with tensile test performed. In addition if ASTM A269 tubing is used solution heat treated impacted testing is required.

INSTRUCTION DATA	
1/2" FNPT	
1/2" FNPT	

UNLESS OTHERWISE NOTED
 1. DIMENSIONS ARE IN INCHES. IF USED SI UNITS ARE IN () BRACKETS.
 2. TOLERANCES
 FRACTIONAL: +/- 1/4"
 DECIMALS: .XX +/- .02
 .XXX +/- .005

THE INFORMATION CONTAINED IN THE DRAWING IS THE SOLE PROPERTY OF CRYOVATION, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CRYOVATION, LLC. IS PROHIBITED.

REV.	DESCRIPTION	DATE	INITIALS
CryoVation, LLC			
TITLE AMBIENT VAPORIZER, HIGH PRESSURE FABRICATION SPECIFICATION			
DRAWN BY SI	APPROVED BY BL	DRAWING SIZE B	
CHECKED BY BL	SCALE NTS	DATE 17/02/2017	
DRAWING NO. 3046-SPEC		REV. 0	SHEET 1 of 3

R-0737