ENVIROLOGIX

QuantiPlate[™] Kit for Cry1C

Highlights:

• Less than 2 hours to run

Contents of Kit:

- 12 strips of 8 antibody-coated wells each, in plate frame
- Cry1C Negative Control
- 0.6 ppb Cry1C Calibrator
- 2.5 ppb Cry1C Calibrator
- 6 ppb Cry1C Calibrator
- Cry1C-Enzyme Conjugate
- 5X Extraction/Dilution Buffer
- 1 packet of Buffer Salts
- Substrate
- Stop Solution

Precision

	Recovery	OD
	(%CV)	(%CV)
Intr	a-Assay	n=18
1.5 ppb	3.1%	3.3%
4.0 ppb	2.5%	2.8%
Inte	r-Assay	n=18
1.5 ppb	4.9%	3.9%
4.0 ppb	5.3%	4.1%

Catalog Number AP 007

Intended Use

The QuantiPlate Kit for Cry1C is designed for the quantitative laboratory detection of Cry1C residues in plant leaf tissue samples.

How the Test Works

This kit is a "sandwich" Enzyme-Linked ImmunoSorbent Assay (ELISA). In the test, plant leaf sample extracts are added to test wells coated with antibodies raised against Cry1C toxin. Any residues present in the sample extract bind to the antibodies, and are then detected by addition of enzyme (horseradish peroxidase)-labeled Cry1C antibody.

After a simple wash step, the results of the assay are visualized with a color development step; color development is proportional to Cry1C concentration in the sample extract.

Lighter color = Lower concentration Darker color = Higher concentration

Performance

Performance parameters below were all measured with a *Bacillus thuringiensis*produced protein (present in the kit calibrators). Results will vary with Cry1C protein from different sources.

Limit of Detection

The lowest recommended calibrator to use with this kit is 0.6 parts per billion (nanograms/mL, ppb) Cry1C. The Limit of Detection (LOD) of this kit is 0.2 ppb Cry1C. The LOD was determined by interpolating an OD equal to three standard deviations above the mean of a population of negative leaf samples, from a Cry1C standard curve.

Limit of Quantification

The Limit of Quantification (LOQ) of the EnviroLogix Cry1C Plate Kit was validated at 0.75 ppb in various leaf matrices. The LOQ was determined by fortifying a population of Cry1C negative leaf samples at 0.75 ppb Cry1C. The mean recovery was 110% with a coefficient of variation [CV, (standard deviation/mean) x 100] of 8.6%.

Precision

Cry1C-fortified control solutions were repetitively analyzed both within a single assay, and in different assays on different days. The data is expressed as % CV for both the recovered concentration and for absorbance (OD).

Fortification and Recovery

Twelve Cry1C negative leaf samples were fortified with Cry1C to concentrations ranging from 0.75 ppb to 4.0 ppb. The average recovery was 110%, with CV's of 5.8 to 8.6%.



Prepare Wash and Extraction Buffers



Obtain leaf tissue



Grind tissue, add buffer, grind again

Materials Not Provided

- Disposable Tissue Extractors, EnviroLogix Cat. # ACC 002
- disposable tip, adjustable air-displacement pipettes which will measure 50 and 100 microliters (μL)
- marking pen (indelible)
- tape or Parafilm®
- timer (15 minutes, 1 hour, and 30 minutes)
- distilled or de-ionized water for preparing Wash Buffer and diluting 5X Cry1C Extraction/Dilution Buffer
- glass bottles or flasks with 175 mL capacity for storage of 1X Extraction/ Dilution Buffer and 1 liter capacity for Wash Buffer
- microtiter plate reader or strip reader
- wash bottle, or microtiter plate or strip washer
- multi-channel pipette that will measure 50 and 100 μ L (optional)
- racked dilution tubes for loading samples into the plate with a multichannel pipette (optional)

Preparation of Solutions

- 1. **Wash Buffer:** Add the contents of the packet of **Buffer Salts** (phosphate buffered saline, pH 7.4 Tween 20) to 1 liter of distilled or de-ionized water, and stir to dissolve. Store refrigerated when not in use; warm to room temperature prior to assay.
- 2. **1X Extraction/Dilution Buffer:** To prepare 1X working Extraction/ Dilution Buffer, add the entire contents of the bottle of 5X (35 mL) supplied in the kit to 140 mL of distilled or deionized water in a suitable container. Mix thoroughly to dissolve. Store refrigerated when not in use; warm to room temperature prior to assay.

NOTE: The Extraction-Dilution Buffer supplied in this kit is identical to that supplied in the EnviroLogix Cry1Ab/Cry1Ac Plate Kit (Cat# AP 003) and the Cry2A Plate Kit (Cat# AP 005). Therefore, extracted leaf samples can be diluted and tested in all three of these plate kits.

Sample Preparation

Sample Extraction:

1. Take 2 leaf punch samples (approximately 10 milligrams each) by snapping the tube cap of the Disposable Sample Extractor down on the leaf. Insert the pestle into the tube and grind the tissue by rotating the pestle against the sides of the tube with twisting motions. Continue this process for 20-30 seconds, or until the leaf tissue is well ground. Use a new extraction device for each sample. Use extreme caution to prevent sample-to-sample cross-contamination with plant tissue or exudate.

Alternately, use a bead-beater device or homogenizer for more complete extraction.

NOTE: If the assay is to be used to <u>quantitate</u> levels of Cry1C toxin in leaf tissue, the weight of each leaf punch sample must be determined and recorded.

2. Add 0.5 mL of 1X Extraction/Dilution Buffer to the tube.

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Remove unneeded strips



Add calibrators and sample extracts



Mix plate



Incubate



Bottle Wash method

3. Repeat the grinding step to mix tissue with Extraction/Dilution Buffer. Repeat this protocol for each sample to be tested, using a new tube and pestle for each. Allow the solids to settle in each tube for a few minutes.

Sample Dilution:

Concentrations of Cry1C toxins will vary from plant to plant. Sample extracts may be tested without further dilution, with the results indicating whether or not the plant tested contains Cry1C protein. Dilution of positive extracts will be necessary in order to bring assay results within the range of calibration. For example:

For a 1:51 dilution: add 1 mL 1X Extraction/Dilution Buffer to dilution tubes labeled for each sample. Add 20 μ L sample extract and mix.

How to Run the Assay

- Read all of these instructions before running the kit.
- Allow all reagents to reach room temperature before beginning (at least 30 minutes with un-boxed strips and reagents at room temperature do not remove strips from bag with desiccant until they have warmed up).
- Organize all Calibrators and sample extracts, and pipettes so that step 1 can be performed in 15 minutes or less.
- If more than four strips are to be run at one time, the 15 minutes is likely to be exceeded, and the use of a multi-channel pipette is recommended (see "Note" below).
- If four or fewer strips are to be run, use a disposable-tip air-displacement pipette and a clean pipette tip to add each Calibrator and diluted sample extract to the wells. Conjugate, Substrate, and Stop Solution may be added in the same manner; alternatively, use a repeating pipette with a disposable tip on the end of the Combitip for these three reagents.
- If fewer than all twelve strips are used, reseal the unneeded strips and the desiccant in the foil bag provided, and refrigerate.
- Use the well identification markings on the plate frame to guide you when adding the samples and reagents. In a qualitative (semi-quantitative) assay, the Negative Control (NC), three non-zero calibrators, and 88 diluted sample extracts (S) may be run on one plate. (See the Qualitative Assay Example Plate Layout Figure 1A). For a quantitative assay the Negative Control (NC) and three Calibrators (C1-C3), along with 44 diluted sample extracts (S) may be run in <u>duplicate</u> wells on one plate. (See the Quantitative Assay Example Plate Layout Figure 1B).
- Add 50 μL of Negative Control, 50 μL of each Calibrator, and 50 μL of each diluted sample extract to their respective wells, as shown in the Example Plate Layouts (Figures 1A and 1B). Follow this same order of addition for all reagents.

NOTE: In order to minimize setup time it is recommended that a multichannel pipette be used in steps 1, 4, 8 and 10 when more than 4 strips are used.

- 2. Thoroughly mix the contents of the wells by moving the strip holder in a rapid circular motion on the benchtop for a full 20-30 seconds. Be careful not to spill the contents!
- 3. Cover the wells with tape or Parafilm to prevent evaporation and **incubate** at ambient temperature for **15 minutes.**
- 4. Add **50 μL** of **Cry1C-enzyme Conjugate** to each well. Do not empty the well contents or wash the strips at this time.

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Strip Plate Wash option



Complete protocol and add Stop Solution



Read plates in a Plate Reader within 30 minutes of the addition of Stop Solution.

Figure 3. Illustrative Cry1C standard curve



- 5. Thoroughly mix the contents of the wells as described in step 2. Be careful not to spill the contents!
- 6. Cover the wells with <u>new</u> tape or Parafilm to prevent evaporation and **incubate at ambient temperature for 1 hour.**
- 7. After incubation, carefully remove the covering and vigorously shake the contents of the wells into a sink or other suitable container. Flood the wells completely with Wash Buffer, then shake to empty. Repeat this wash step three times. Slap the plate on a paper towel to remove as much Wash Buffer as possible. Alternatively, perform these four washes with a microtiter plate or strip washer.
- 8. Add 100 µL of Substrate to each well.
- 9. Thoroughly mix the contents of the wells, as in step 2. Cover the wells with <u>new</u> tape or Parafilm and **incubate for 30 minutes** at ambient temperature.

Caution: Stop Solution is 1.0N Hydrochloric acid. Handle carefully.

10. Add **100 μL** of **Stop Solution** to each well and mix thoroughly. This will turn the well contents yellow.

NOTE: Read the plate within 30 minutes of the addition of Stop Solution.

How to Interpret the Results

Spectrophotometric Measurement

- 1. Set the wavelength of your microtiter plate reader to 450 nanometers (nm). (If it has dual wavelength capability, use 600, 630 or 650 nm as the reference wavelength.)
- 2. Set the plate reader to blank on the Negative Control wells. If the reader cannot do this, measure and record the optical density (OD) of each well's contents, then subtract the average OD of the Negative Control wells from each of the readings.

General Test Criteria:

- The mean OD of the BLANK wells should not exceed 0.2.
- The coefficient of variance (%CV) between the duplicate Calibrator and sample wells should not exceed 15%.

%CV =<u>std. deviation of OD's x</u> 100 mean OD

If the results of an assay fail to meet these criteria, consult EnviroLogix' Technical Service for suggestions on improving the test when you repeat the assay.

3. For a quantitative Cry1C assay, a **linear or quadratic** curve fit for the standard curve should be used if the microtiter plate reader you are using has data reduction capabilities. If not, calculate the results manually as described in the "How to Calculate the Quantitative Cry1C Results" section.

How to Interpret the Semi-Quantitative Results

Compare the OD's of the diluted sample extracts to those of the Calibrators to obtain an estimate of the amount of Cry1C endotoxin in your sample <u>extract</u>.



How to Calculate the Quantitative Cry1C Results

- 1. After reading the wells, average the OD of each set of calibrators and samples.
- 2. Graph the mean OD of each Calibrator against its Cry1C concentration on a linear scale (see Figure 3).
- 3. Determine the Cry1C concentration of each sample by finding its OD value and the corresponding concentration level on the graph. Multiply the result by the dilution factor incurred during extraction (500 μ L ÷ *x* mg leaf tissue) and multiply by any dilution of sample extract employed, and divide by 1000. Report results as micrograms Cry1C toxin per gram of tissue (ppm).
- 4. Interpolation of sample concentration is only possible if the OD of the sample falls within the range of OD's of the Calibrators.

If the OD of a sample is <u>lower</u> than that of the Low Calibrator (0.6 ppb Cry1C), the sample must be reported as less than: (0.6 ppb x dilution factor during extraction x dilution of sample extract employed) \div 1000 = x ppm Cry1C.

If the OD of a sample is higher than that of the High Calibrator (6 ppb Cry1C), the sample must be reported as greater than:

(6 ppb x dilution factor during extraction x dilution of sample extract employed) \div 1000 = x ppm Cry1C.

If a concentration must be determined for these high level samples, dilute the sample extract 10-fold more than executed in the original assay in 1X Extraction/Dilution Buffer. Run this dilution in a repeat of the immunoassay. If the result now falls within the range of the OD's of the Calibrators, youmust then be sure to use this new dilution factor of sample extract in the calculations described above.



Figure 1A. Example of a typical Qualitative assay setup.

	1	2	3	4	5	6	7	8	9	10	11	12
А	NC	NC	S9	S17	S25	S33	S41	S49	S57	S65	S73	S81
В	C1	C1	S10	S18	S26	S34	S42	S50	S58	S66	S74	S82
С	C2	C2	S11	S19	S27	S35	S43	S51	S59	S67	S75	S83
D	C3	C3	S12	S20	S28	S36	S44	S52	S60	S68	S76	S84
Е	S 1	S2	S13	S21	S29	S37	S45	S53	S61	S69	S77	S85
F	S3	S4	S14	S22	S30	S38	S46	S54	S62	S70	S78	S86
G	S5	S6	S15	S23	S31	S39	S47	S55	S63	S71	S79	S87
Н	S 7	S 8	S16	S24	S32	S40	S48	S56	S64	S72	S80	S88

Figure 1B. Example of a typical Quantitative assay setup.

-												
	1	2	3	4	5	6	7	8	9	10	11	12
Α	NC	NC	S5	S5	S13	S13	S21	S21	S29	S29	S37	S37
В	C1	C1	S6	S6	S14	S14	S22	S22	S30	S30	S38	S38
С	C2	C2	S 7	S7	S15	S15	S23	S23	S31	S31	S39	S39
D	C3	C3	S 8	S8	S16	S16	S24	S24	S32	S32	S40	S40
Е	S1	S1	S9	S9	S17	S17	S25	S25	S33	S33	S41	S41
F	S2	S2	S10	S10	S18	S18	S26	S26	S34	S34	S42	S42
G	S 3	S3	S11	S11	S19	S19	S27	S27	S35	S35	S43	S43
Н	S4	S4	S12	S12	S20	S20	S28	S28	S36	S36	S44	S44

Well		Average OD		Cry1C
contents	OD	\pm sd	%CV	Concentration
Negative	0.035	0.026 ± 0.001	3.4	NΛ
Control	0.037	0.030 ± 0.001	5.4	INA
0.6 ppb	0.234*	0.220 ± 0.007	27	NA
Calibrator	0.243	0.239 ± 0.007	2.7	INA
2.5 ppb	1.155*	1.152 ± 0.002	03	NΛ
Calibrator	1.151	1.133 ± 0.003	0.5	INA
6 ppb	2.782*	2.756 ± 0.036	13	ΝA
Calibrator	2.731	2.730 ± 0.030	1.5	INA
Sampla	0.760*	0.750 ± 0.002	03	1.7 nnb**
Sample	0.757	0.739 ± 0.002	0.5	1.7 pp0.

* Figures are after subtraction of Negative Control values.

**Sample is a positive extract which had been diluted 1:51 prior to assay: Concentration from curve = 1.7 ppb Cry1C, multiplied by 1:51 dilution of sample extract = 86.7 ppb, multiplied by 1:25 dilution during extraction (20 mg leaf sample extracted with 0.5 mL), and divided by 1000 = 2.17 ppm Cry1C in leaf.

Actual values may vary; this data is for demonstration purposes only.

Precautions and Notes

- Store all Kit components at 4°C to 8°C (39°F to 46°F) when not in use.
- Do not expose Kit components to temperatures greater than 37°C (99°F) or less than 2°C (36°F).
- Allow all reagents to reach ambient temperature ($18^{\circ}C$ to $27^{\circ}C$ or $64^{\circ}F$ to $81^{\circ}F$) before use.
- Do not use kit components after the expiration date.
- Do not use reagents or test well strips from one Kit with reagents or test well strips from a different Kit.
- **Do not expose Substrate to sunlight** during pipetting or while incubating in the test wells.
- The assay has been optimized for use with the protocol provided in the kit. Deviation from this protocol may invalidate the results of the test.
- As with all tests, it is recommended that results be confirmed by an alternate method when necessary.
- Cry1C endotoxins are proteins which can be degraded by heat and sunlight. Take samples from green, actively growing leaves. Samples that cannot be extracted immediately may be stored frozen for up to 1 week prior to analysis.
- Observe any applicable regulations when disposing of samples and kit reagents.





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This Limited Warranty states the entire obligation of EnviroLogix with respect to the Products. If any part of this Limited Warranty is determined to be void or illegal, the remainder shall remain in full force and effect.

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CTION 1. Identification of the substance// Product identifier Trade name: Part number: Relevant identified uses of the substance or mixtu	minure and of the company/and-ordering Wash Buffer Salts 55-0091,10099	Suitable extinguishing agents: 5.2 Special hazards arising from the substance mixture: 5.2 Advice for firefighters:	CO2, extinguishing powder or water spay. Fight larger fires with water spay or alcehol resistant foam. Carbon roxids, Oxides of Phosphoreus, Potassian, Sodium, Hydrogen Chloridi Wear protective quipment appropriate for fire conditions including respiratory protective gui
and uses advised against application of the substa / the preparation : Details of the supplier of the safety data sheet Manufacturer/Supplier:	ce Laboratory chemicals Envirol.ogix (nc., 500 Riverside Industrial PKwy, Portand ME 04103, USA (207) 79-2080	SECTION 6. Accidental release measures 6.1 Personal precations, pretective equipment and emergency procedures:	Use PPE, avoid dust formation, ensure adequate ventilation, avoid breathing dust
Emergency telephone number:	(207) 797-0300 Technical Service	6.2 Environmental precautions:	Prevent further leakage or spillage if safe to do so. Do not let product enter drains
CHON 2. Hozards identification Classification of the Substance or Mixture:	200	6.3 Methods and material for containment and clean up:	Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in
(Hazard Communication):	Not a hazardous substance or mixture	6.4 Reference to other sections:	suitable closed containers for disposal For safe handling refer to Section 7: For information on PPE refer to Section 8: Fo
Label Elements:	None required according to 29CFR 1910.1200		disposal, refer to Section 13.
Other indications	None	SECTION 7. Handling and storage 7.1 Precautions for safe handling:	Practice good chemical hyziene when handling. Avoid contact with eves, skin and
Additional Information	Manufacture in Commutian	7.2 Conditions for safe storage, including any	clothing. Prevent formation of dust.
Auditorit information:	NO OTHER INCOMMANDIN	7.3 Specific end use(s):	Keep containers crossed, store in a dry, well ventilated space. Apart from the uses mentioned in section 1.2, no other end uses are stipulated.
CTION 3. Composition/information on ing	redients		
Mixture: Powdered solid Synonyms: PBS		SECTION 8. Exposure controls/personal p 8.1 Control parameters:	rotection
Hazardous Components Chemical na	me CASNo ECNo Amount Classification	Components with workplace control Parameters:	Contains no substances with occupational exposure limit values
Potassium Ch	loride 7447-40-7 231-211-8 1-5 % Aquatic Acute 3; Aquatic	8.2 Exposure controls 8.2.1 Amyoprints environmentals	Ensure assumed and enfoty charger are nearby: provide partition if necessary
sed on the amount of hazardous ingredients in this	product, it is not considered hazardous according to 29CFR 1910.1200	8.2.2 Personal Protective Equipment:	consists systematic and sensity success are nearby; provide vehiclation in needstary
ECTION 4. First aid measures		Eyes	Safety glasses with side shields, goggles. Use equipment for eye protection tested a approved under appropriate government standards such as NIOSH (US) or EN 166 Eye and face protection regulations are described by OSHA (US) in 29CFR1910.12 not wear contact lenses when working with chemicals
After inhalation After skin contact After eye contact	Supply finals air consult doctor in case of breading difficulties. Finals data with plenty of water for all loand 15 minutes. Remove contaminated elohing, Seek modelai attention af intribution develope. Rimse opened of of newral minutes under running water. Seek medical attention if initiation develops. If avail/owed consult with medical staff or noison coerted centre to determine if farv	Hands	Handle with gloves. Gloves must be inspected prior to use. Use proper glove remov technique (without touching glove's outer surface) to avoid sim contact with this product. Dispose of constraintained gloves after use in accordance with applicable lar and good laboratory practices. Wash and dry hands. The selected protective gloves to satisfy the appendications of EUD Instruct 80/86/EEC and the standard EN 374.
Most important symptoms and effects, both acute and delayed:	immediate response or follow up actions are recommended. Never give anything by mouth to an unconscious person. None	Respiratory protection	oursee aroun Appropriate respiratory protection should be determined according to local conditivi using risk analysis protocods. An approved disposable air purifying particulate respirance may be used as a backup to engineering controls. Always use repirators and compu- tested and approved under approprint government straturdes such as balloostil. USORI (US).
and special treatment needed:	No special treatment is required	Body	CEN (EU). Use hode protection relative to its type and amount of material being bandled
		8.2.3 Environmental controls:	Sweep or wipe up spills, do not allow into severs or drains
SDS : Microcystin Wash Buffer	Revision: 13 February, 2015 Page 1 of 4	SDS : Microcystin Wash Buffer	Revision : 13 February, 2015 Page 2 of 4
SDS: Microcystin Wash Buffer SCTION 9: Physical and chemical propertie CI Information on basic physical and chemical preprints:	Revision : 13 February, 2015 Page 1 of 4	SDS : Microcystin Wash Buffer SECTION 1.3. Disposal consider ations Dispose of excess or transad product in accordance service to dispose of this matrial.	Revision : 13 February, 2015 Page 2 of 4 e with Local, State and Federal regulations. Contact a hormood professional waste dispor
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	ECTION 1. Identification of the substance	e/mixture and of	the company/undertaking		SEC	TION 5. Compositi	ion/informa	tion on ingr	edients			
	1 Product identifier Trade name:	Stop Solt	ution		3.2	Aqueous solution	IN Hydrochlo	ric Acid (1N	HCl, 3 % HCl)			
	Synonyms: Part number 2 Palerant identified uses of the substance or	1.0 N HC 10825, 10	2 1 827, 10828, 11193, 11776 (XG	iD007)		Chemical name	Amount (%)	CAS No	Classification	n According to OS	HA 29CFR 1910	0.1200
	2 relevant identified uses of the substance or mixture and uses advised against application of the substance / the preparation :	i Laboratori	v chemicals			Hydrochloric acid	1-4 %	EC No	Hazard Classifica	ation	Has	zard Code
	3 Details of the supplier of the safety data sheet Manufacturer/Supplier:	EnviroLog	ix Inc., 500 Riverside Industri	al Pkwy.				7647-01-0	May be Corrosive to	o Metals		H290
		Portland M Phone: (20	IE 04103, USA 07) 797-0300	100000000				231-393-7	Causes Skin Irrit	tation		H315
	4 Emergency telephone number:	(207) 797-	0300 Technical Service]					Causes Serious Eye	Damage		H318
	ECTION 2. Hazards identification 1 Classification of the substance or mixture Classification according to OSU 3 20 CEP 1016	Hazard (Classes									
	Classification according to OSHA 29 CFR 1910	Skin Irrit Serious F	ation (Cat 2) H315 Eye damage (Cat. 1) H318		SEC	TION 4. First aid r	neasures					
<form> Australization: Augustion: You will be a first or any analysis of the second sec</form>	2 Label elements Labeling according to OSHA 29CFR 1910.1200	D			4.1 D A	escription of first aid fter inhalation :	measures		In case of inhalation. Re	emove to fresh air.	If not breathing g	tive artificial
Augustati Fundamentation Read extraction The server state is the server stat	Hazard pictograms :		\$		A	fter skin contact :			respiration. Get medical In case of skin contact. R Wash affected area with	d attention immediat Remove contaminate i mild soap or deterg	tely. ed clothing and sl ent for at least 10	hoes immediately.) minutes or until 1
		\sim			A	fler eve contact :			evidence of chemical ren In case of eve contact, in	mains. mmediately flush ey	es with plenty of	water for at least
	Signal word :	Warning				in of o conduct.			minutes. Lifting eyelids medical attention immed	s occasionally, until diately.	no evidence of ch	hemical remains.
	Hazard statements:	H290 M	ay be corrosive to metals		A	fter swallowing :			medical personnel. Nev	ver give anything by	mouth to an unc	onscious person. (
Name data sea		H318 Ca	uses serious eye damage		4.2 M	lost important sympt	oms and effe	ts, both acut	e physician minicularciy.			
	Precautionary statements:	P281 P302 + P	Use personal protect 352 IF ON SKIN: Was	ctive equipment as required h with plenty of soap and water.	A	nd delayed:			May cause skin irritation	n and eye damage		
		P305+ P3	351+P338 IF IN EYES: Rins minutes. Remove o Continue rinsing.	e cautiously with water for several contact lenses if present and easy to do.	4.3 II sq	pecial treatment need	ediate medica led:	I attention at	DO NOT use sodium bic	carbonate in an atter	npt to neutralize	the acid.
$\frac{1}{12 \operatorname{spectrum}} = \frac{1}{12 \operatorname{spectrum}}$	3 Other Statements	None			SEC	TION 5. Firefightin	ng measures					
1 Section of a					5.1 E	xtinguishing media:			CO2, extinguishing powder or resistant foam.	r water spray. Fight	larger fires with	water spray or alco
					5.2 S m	pecial hazards arisin; iixture:	g from the su	bstance or	Hydrogen Chloride gas			
					5.3 A	dvice for firefighters			Wear protective gear appropri	riate for fire conditio	ons including resp	piratory protective
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Breathing Equipment: Appropriate reginatory protection absolid be determined according to lead conditions using in a staupping protection appropriate reginatory may be used as a backup to eignneeting controls. Always use reparators and components to stati and appropriate agreement standards such as NOSH (US) or CEN (UU). Sensitization: No satisfizing effects hown 8.2.3 Environmental exposure controls: Contain spills, do not allow into environment No CMR effects: No CMR effects: Statisfizing effects language Contain spills, do not allow into environment No CMR effects: No CMR effects: Statisfizing effects language Contain spills, do not allow into environment No CMR effects: No CMR effects:	SDS : Stop Solution (XGD007) SDS : Stop Solution (XGD007) SDS : Stop Solution (XGD007) 4 References to other sections: 4 References to other sections: EXTLOX 7. Limitiling and storage 1 Precusitions for sofe storage, including any incompatibilities 3 Specific end use(s): EXTLOX 8. Exposure control/spersonal per 1 Exposure Controls: 8.2.1 Engineering at the weekplace. B 2.1 Engineering at the weekplace. 8.2.1 Engineering at the weekplace. B 2.1 Engineering at the weekplace. B 2.1 Engineering at the weekplace. B 2.1 Engineering at the weekplace. B 2.2 Specific end and Protections: B 2.3 Detections: B 2.4 Detections: B 2.4 Detections: B 2.5 Detections:	Absorb in paper to Large epils may coade. For safe handling disposal refer to 2 coade. Store in tighty ele sanight and heat. Apart from the use satisfied in the satisfied of the coade of	Revision : 13 April, 2015 towel and diseard in appropriat to rearrange the second of t	Page 1 of 6 evants: Clean with water allerwords tors of sodum earbornte or calcium ation on PPE refer to Section R. For tweld contact with eyes, skin, and consolve compatible area. Prevent direct ros. consolve compatible area. Prevent direct clean section and the section of t	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	S: Step Solution (X Single Solution (X) S	CGD007) Triple Steenife	Cl Properties Properties N N N N N N N N N N N N N N N N N N N	Revision : are liquid, colorados to slight y argent (ciquid) to Data Available 1 1 2 2 2 2 2 2	: 13 April, 2015 vellow. http:// Acetate = 1 e similar to that of w available. tares and pressures. http:// Acetate = 1 inter and pressures. http:// Acetate = 1 pressures. http:// Acetate = 1 inter and pressures. http:// Acetate	ater dous reactions w dous decomposit	Page 2
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12.1 foskeity: Aquelle dockrift (1 N HC). Elbert doer Exposure time Acute fish toxicity LC59-B25 mpL 96h Acute daphrina toxicity No data	SDS : Stop Solution (XGD007) SDS : Stop Solution (XGD007) 4 References to other sections: CECTON 7. Handling and storage 1 Precautions for sofe bandling: 12 Conditions for sofe storage, including any incompatibilities 33Specific end use(s): ECTON 8. Exposure controls/personal per 1 Exposure Controls: 8.2.1 Engineering controls 8.2.2 General protection: Brand protection: Hand Protection: Resulting Equipment: 8.2.3 Environmental exposure controls:	Abooth in paper in Large rolls may coade. For such handling disposal refer to : disposal refer to : Store in tightly disposal refer to : Store in tightly disposed refer to : Store in tightly dispo	Revision : 13 April, 2015 towel and discard in appropriat to enertralized with dilute setuit te enertralized with dilute setuit refer to Section 7. For inform section 13 tical bygiene when handling	Page 1 of 6 e waste. Clean with water allerwords. tions of softum carbonate or calcium tions of softum carbonate or calcium tates on PPE refer to Section R. For word contact with oys, skin, and consoire compatble area. Prevent direct ox. there specific uses are stipulated	500 500 500 500 500 500 500 500 500 500	S: Stop Solution (X Solution (X) Solution (X	GGD007) IN Fiender GGD007) IN Fiender Figure Figure Figure Figure Figure Figu	L propertite CI P. N. N. N. N. N. N. N. N. N. N.	Revision : General Galaxies of a second seco	: 13 April, 2015 vellow. vellow. http:// Acetate = 1 vellow. v	ater dous reactions w dous decomposit	Page 2
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QuantiPlate Kit for Cry1C Page 10 of 10

12.2 Persistence and degradability	No Data Available	SECT	ION 16. Other information		
2.3 Bio accumulative notential:	No Data Available	This inf	formation is true based on our present know	eledge. However, EnviroLogix	a makes no representation of its accuracy or complete
4 Mobility in soil :	No Data Available	Persons use. Th	s receiving this information must exercise th is document shall not constitute a guarantee	e for any specific product feat	uces mining the product's supery and suitability for i tures and shall not establish a legally valid contracts
5 Results of PRT and vPvR assessment	Not available as a chemical safety assessment not remired/not conducted	relation RHS De	evartment		
6 Other adverse effects	No Data Availabla	Envirol.	Logix Inc.		
s other adverse effects:	No Data Avallable	Codes: H290	May be Corrosive to Metals	P281	Use Personnel Protective equipment as Requi
CTION IN DUAL OF A		H315	Causes Skin Irritation	P302 + P352	IF ON SKIN: Wash with plenty of soap and water
aste treatment methods:	Contact a licensed professional waste disposal service to dispose of this material. Disposal of samplus or waste solutions must be in accordance with applicable local, state, and national laws and regulations.	1010	Cares ortions Life Lemmer	13071301130	in the Field sector contact lenses if present and ease Continue rinsing.
CTION 14. Transport information 1 UN-Number DOT, ADR, ADN, IMDG, IATA	: UN1789				
2 UN proper shipping name DOI, ADR, ADN, 3 Transport hazard class(es) DOT, ADR, ADN, 4 Packing group (DOT, ADR, IMDG, IATA):	IMDG, IATA : HYDROCHLORIC ACID SOLUTION IMDG, IATA): 8 III				
5 Environmental hazards	Not hazardous to the environment.				
.6 Special precautions for user :	None				
.7 Transport in bulk according to Annex II of N and the IBC code:	IARPOL73/78 No information available.				
7 Transport in bulk according to Annex II of N and the IBC code: TION 15. Regulatory information 1 Safey, health and environmental regulations/legislation specific for the substruce are informe	IARPOL7378 No information available.				
A7 Transport in bulk according to Annex II of N and the IBC code: <u>TTON 16 Republication your formation</u> <u>TTON 16 Republication specific for the ubdatance on the environmental S Federal Regulations TSAA S Toto Regulations TSAA Channed Test Refer Channed Test Refer Channed Test Refer</u>	IARPOL7378 No information available: CASP 7647.01.0 (a) not listed on the TSCA inventory. None inder a Chemical Test Rule. CASP 7617-10-5000 (b) fam. RQ, 2270 Kg final RQ.				
AT ransport in bulk according to Annex II of N and the IBC code: <u>TTEN 15. Regulatory information</u> <u>TTEN 15. Regulatory information</u> regulation/regulation specific for the ubdatase or autoactive ST federal Regulations Health and Safery Reporting List Channed Test Rafe CERCLA SARA Section 392 (Estremely Hazardous SARA Section 392 (Estremely Hazardous Gana Ari Ari Clam Water Art Clam Water Art Costi	ARPOL2/378 No information available: CAS# 7647-01-0 is not listed on the TSCA inventory. None listed None under a Chemical Test Rule. CAS# 7647-01-0 is Solid as Rule RQ2 2270 Kg final RQ. CAS# 7647-01-0 is Slot as a huzardous substance under the CWA. CAS# 7647-01-0 is Slot as a huzardous Substance under the CWA. CAS# 7647-01-0 is Slot as a huzardous Substance under the CWA.				
A Transport in bulk according to Annex II of N and the IBC code: TERN 15. Regulatory information TERN 15. Regulatory information Test State Regulation specific for the abstitute or an environmental regulation/regulation specific for the abstitute or an environmental ST feelant and Starty Reporting List Chemical Test Rate CERCLA SARA Section 302 (Estremely Hazardous SARA Section 302 (Estremely Hazardous Gana Ari Ari Clam Water Act OSIA State Regulations	ARPD12/378 No information available: CAS# 76/17-01-0 is not listed on the TSCA inventory. None insted CAS# 76/17-01-0 is Solid Self and RQ, 2270 Kg final RQ. CAS# 76/17-01-0 is Solid Self and RQ, 2270 Kg final RQ. CAS# 76/17-01-0 is Solid as a bacardous sir pollutant (HAP). CAS# 76/17-01-0 is Solid as a bacardous Substance under the CWA. CAS# 76/17-01-0 is Solid as a bacardous Substance under the CWA. CAS# 76/17-01-0 is Solid as a bacardous Substance under the CWA. CAS# 76/17-01-0 is included and highly bacardous by OSHA.				
A Transport in bulk according to Annex II of N and the IBC code: TION 14. Regulatory information UTION 14. Regulatory information TON 15. Regulatory information Totary health and environmental regulations/epidation specific for the ubufance or marking Regulations Totarian of Safety Regulation CERCLA SARA Selection 302 (Estremely Hazardous Sahanacea) Gasta Water Act Casar Water Casar	IARPD12/378 No information available: CAS# 7647-01-0 is not listed on the TSCA inventory. None listed CAS# 7647-01-0 is local and Reg. 2270 Kg final RQ. CAS# 7647-01-0 is listed as a heardness structure and ref the CWA. CAS# 7647-01-0 is listed as a heardness structure under the CWA. CAS# 7647-01-0 is listed as a heardness structure under the CWA. CAS# 7647-01-0 is listed as a heardness structure under the CWA. CAS# 7647-01-0 is include as heardness structures the first the CWA. CAS# 7647-01-0 is can be found on the following state right to lineow lists: CA. NJ, PA, MN, NA. CAS# 7647-01-0 is not structure invised for a list substance or its uses are exempted from registration, the armal tennage does not registrate of the invised for the right structure invised for a list substance or its uses are exempted from registration, the armal tennage does not registrate of the invised for the right structure invised for the list substance or its uses are exempted from registration, the armal tennage does not registrate of the invised for the right structure invised for the right structure and line.				
77 Transport in bulk according to Annex II of X and the IEC code: TICK1EC Regulatory information TICK1EC Regulatory information regulation-legislation specific for the STACK3. Bulk and environmental TSCA Softward Hargatotisms TSCA Softward Hargatotisms TSCA Softward Hargatotisms StackA Section 200 (Enternsly Hazardons Subdameo) Class Water Act Class Water	Description Description CAS# 7647-01-0 is not listed on the TSCA inventory. None listed Description Case and Channel Tee Rule. Description Case and Tee Rule. Description Case 7647-01-0 is listed as a hazardons air pollinter (1/0) CAS# 7647-01-0 is listed as a hazardons air pollinter (1/0) CAS# 7647-01-0 is listed as a hazardons air pollinter (1/0) CAS# 7647-01-0 is listed as a hazardons air pollinter (1/0) CAS# 7647-01-0 is listed as a hazardons air pollinter (1/0) CAS# 7647-01-0 is listed as a hazardons air pollinter (1/0) CAS# 7647-01-0 is listed as a hazardons air pollinter (1/0) CAS# 7647-01-0 is listed as a hazardons air pollinter (1/0) CAS# 7647-01-0 is listed as a hazardons air pollinter (1/0) CAS# 7647-01-0 is listed as a hazardons air pollinter (1/0) CAS# 7647-01-0 is listed as a hazardons air pollinter (1/0) CAS# 7647-01-0 is listed as a hazardons air pollinter (1/0) CAS# 7647-01-0 is listed as a hazardons air pollinter (1/0) CAS# 7647-01-0 is listed as a hazardon discrete air listed as a hazardon discrete ai				