Test Type: 14-WEEK Route: DOSED WATER Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

BMIM Rats - Final 2

**NTP Study Number:** C50050

Lock Date: 05/25/2018

Cage Range: ALL

**Date Range:** ALL

**Reasons For Removal:** ALL

**Removal Date Range:** ALL

Include ALL **Treatment Groups:** 

**Study Gender:** Both

**TDMSE Version:** 3.0.2.3\_002

**PWG Approval Date:** NONE

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

### SUMMARY OF STATISTICALLY SIGNIFICANT (P<=.05) RESULTS IN THE ANALYSIS OF IONIC LIQUID: 1-BUTYL-3-METHYLIMIDAZOLIUM CHLORIDE

#### **FEMALE RATS**

Organ Liver

Nose: Epithelium

Nose: Olfactory Epithelium

#### Morphology

Hepatodiaphragmatic Nodule Inflammation Chronic Accumulation, Hyaline Droplet

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

		Males
DOSE	0 mg/mL male	1 mg/mL male
Adrenal Cortex Hypertrophy Focal		
LESION RATES		
OVERALL (a)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00
POLY-3 PERCENT (g)	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)
FIRST INCIDENCE		
STATISTICAL TESTS		
POLY 3		(n)
POLY 1.5		(n)
POLY 6		(n)
COCH-ARM / FISHERS		(n)
MAX-ISO-POLY-3		(n)

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride CAS Number: 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

		Males	
DOSE	0 mg/mL male	1 mg/mL male	
Bone: Maxilla Inflammation Chronic			
LESION RATES			
OVERALL (a)	0/10 (0%)	0/10 (0%)	
POLY-3 RATE (b)	0/10.00	0/10.00	
POLY-3 PERCENT (g)	0%	0%	
TERMINAL (d)	0/10 (0%)	0/10 (0%)	
FIRST INCIDENCE			
STATISTICAL TESTS			
POLY 3		(n)	
POLY 1.5		(n)	
POLY 6		(n)	
COCH-ARM / FISHERS		(n)	
MAX-ISO-POLY-3		(n)	

Test Type: 14-WEEK Route: DOSED WATER Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride **CAS Number:** 79917-90-1

First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

Date Report Requested: 10/05/2020

Time Report Requested: 12:59:00

			Males	
DOSE	0 mg/mL male	1 mg/mL male		
Epididymis: Duct				
Exfoliated Germ Cell				
LESION RATES				
OVERALL (a)	1/10 (10%)	1/10 (10%)		
POLY-3 RATE (b)	1/10.00	1/10.00		
POLY-3 PERCENT (g)	10%	10%		
TERMINAL (d)	1/10 (10%)	1/10 (10%)		
FIRST INCIDENCE	92 (T)	92 (T)		
STATISTICAL TESTS				
POLY 3		P=0.760		
POLY 1.5		P=0.760		
POLY 6		P=0.760		
COCH-ARM / FISHERS		P=0.763N		
MAX-ISO-POLY-3		P=1.000		

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

			Males	
DOSE	0 mg/mL male	1 mg/mL male		
Heart				
Cardiomyopathy				
LESION RATES				
OVERALL (a)	1/10 (10%)	1/10 (10%)		
POLY-3 RATE (b)	1/10.00	1/10.00		
POLY-3 PERCENT (g)	10%	10%		
TERMINAL (d)	1/10 (10%)	1/10 (10%)		
FIRST INCIDENCE	92 (T)	92 (T)		
STATISTICAL TESTS				
POLY 3		P=0.760		
POLY 1.5		P=0.760		
POLY 6		P=0.760		
COCH-ARM / FISHERS		P=0.763N		
MAX-ISO-POLY-3		P=1.000		

Test Type: 14-WEEK Route: DOSED WATER Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride **CAS Number:** 79917-90-1

First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

Date Report Requested: 10/05/2020

Time Report Requested: 12:59:00

			Males	
DOSE	0 mg/mL male	1 mg/mL male		
Kidney	iva			
Nephropathy Chronic Progr	Tessive			
LESION RATES				
OVERALL (a)	9/10 (90%)	8/10 (80%)		
POLY-3 RATE (b)	9/10.00	8/10.00		
POLY-3 PERCENT (g)	90%	80%		
TERMINAL (d)	9/10 (90%)	8/10 (80%)		
FIRST INCIDENCE	92 (T)	92 (T)		
STATISTICAL TESTS				
POLY 3		P=0.500N		
POLY 1.5		P=0.500N		
POLY 6		P=0.500N		
COCH-ARM / FISHERS		P=0.500N		
MAX-ISO-POLY-3		P=0.274N		

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

		Males	
DOSE	0 mg/mL male	1 mg/mL male	
Liver Hepatodiaphragmatic Nodul	e		
LESION RATES			
OVERALL (a)	0/10 (0%)	0/10 (0%)	
POLY-3 RATE (b)	0/10.00	0/10.00	
POLY-3 PERCENT (g)	0%	0%	
TERMINAL (d)	0/10 (0%)	0/10 (0%)	
FIRST INCIDENCE			
STATISTICAL TESTS			
POLY 3		(n)	
POLY 1.5		(n)	
POLY 6		(n)	
COCH-ARM / FISHERS		(n)	
MAX-ISO-POLY-3		(n)	

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

		Males
DOSE	0 mg/mL male	1 mg/mL male
Lymph Node, Mandibular		
Hyperplasia Lymphocyte		
LESION RATES		
OVERALL (a)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00
POLY-3 PERCENT (g)	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)
FIRST INCIDENCE		<del></del>
STATISTICAL TESTS		
POLY 3		(n)
POLY 1.5		(n)
POLY 6		(n)
COCH-ARM / FISHERS		(n)
MAX-ISO-POLY-3		(n)

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride CAS Number: 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

		Males
DOSE	0 mg/mL male	1 mg/mL male
Nose: Epithelium Inflammation Chronic		
LESION RATES		
OVERALL (a)	0/10 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/10.00
POLY-3 PERCENT (g)	0%	0%
TERMINAL (d)	0/10 (0%)	0/10 (0%)
FIRST INCIDENCE		<del></del>
STATISTICAL TESTS		
POLY 3		(n)
POLY 1.5		(n)
POLY 6		(n)
COCH-ARM / FISHERS		(n)
MAX-ISO-POLY-3		(n)

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

			Males	
DOSE	0 mg/mL male	1 mg/mL male		
Nose: Olfactory Epithelium Accumulation, Hyaline Drop	slet			
7.00amaiaiion, riyamio Brop				
LESION RATES				
OVERALL (a)	7/10 (70%)	6/10 (60%)		
POLY-3 RATE (b)	7/10.00	6/10.00		
POLY-3 PERCENT (g)	70%	60%		
TERMINAL (d)	7/10 (70%)	6/10 (60%)		
FIRST INCIDENCE	92 (T)	92 (T)		
STATISTICAL TESTS				
POLY 3		P=0.500N		
POLY 1.5		P=0.500N		
POLY 6		P=0.500N		
COCH-ARM / FISHERS		P=0.500N		
MAX-ISO-POLY-3		P=0.325N		

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

		Males
DOSE	0 mg/mL male	1 mg/mL male
N		
Nose: Respiratory Epithelium Inflammation Chronic		
LESION RATES		
OVERALL (a)	0/10 (0%)	1/10 (10%)
POLY-3 RATE (b)	0/10.00	1/10.00
POLY-3 PERCENT (g)	0%	10%
TERMINAL (d)	0/10 (0%)	1/10 (10%)
FIRST INCIDENCE		92 (T)
STATISTICAL TESTS		
POLY 3		P=0.500
POLY 1.5		P=0.500
POLY 6		P=0.500
COCH-ARM / FISHERS		P=0.500
MAX-ISO-POLY-3		P=0.158

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride CAS Number: 79917-90-1

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Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

		Males	
DOSE	0 mg/mL male	1 mg/mL male	
Nose: Transitional Epitheliu	m		
Inflammation Chronic			
LESION RATES			
OVERALL (a)	0/10 (0%)	1/10 (10%)	
POLY-3 RATE (b)	0/10.00	1/10.00	
POLY-3 PERCENT (g)	0%	10%	
TERMINAL (d)	0/10 (0%)	1/10 (10%)	
FIRST INCIDENCE		92 (T)	
STATISTICAL TESTS			
POLY 3		P=0.500	
POLY 1.5		P=0.500	
POLY 6		P=0.500	
COCH-ARM / FISHERS		P=0.500	
MAX-ISO-POLY-3		P=0.158	

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

		Males
DOSE	0 mg/mL male	1 mg/mL male
Pancreas: Acinus Atrophy		
LESION RATES		
OVERALL (a)	0/10 (0%)	1/10 (10%)
POLY-3 RATE (b)	0/10.00	1/10.00
POLY-3 PERCENT (g)	0%	10%
TERMINAL (d)	0/10 (0%)	1/10 (10%)
FIRST INCIDENCE		92 (T)
STATISTICAL TESTS		
POLY 3		P=0.500
POLY 1.5		P=0.500
POLY 6		P=0.500
COCH-ARM / FISHERS		P=0.500
MAX-ISO-POLY-3		P=0.158

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

			Males	
DOSE	0 mg/mL male	1 mg/mL male		
Preputial Gland				
Infiltration Cellular Mononu	clear Cell			
LESION RATES				
OVERALL (a)	0/10 (0%)	1/10 (10%)		
POLY-3 RATE (b)	0/10.00	1/10.00		
POLY-3 PERCENT (g)	0%	10%		
TERMINAL (d)	0/10 (0%)	1/10 (10%)		
FIRST INCIDENCE		92 (T)		
STATISTICAL TESTS				
POLY 3		P=0.500		
POLY 1.5		P=0.500		
POLY 6		P=0.500		
COCH-ARM / FISHERS		P=0.500		
MAX-ISO-POLY-3		P=0.158		

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

		Males	
DOSE	0 mg/mL male	1 mg/mL male	
Preputial Gland Inflammation Chronic			
LESION RATES			
OVERALL (a)	3/10 (30%)	3/10 (30%)	
POLY-3 RATE (b)	3/10.00	3/10.00	
POLY-3 PERCENT (g)	30%	30%	
TERMINAL (d)	3/10 (30%)	3/10 (30%)	
FIRST INCIDENCE	92 (T)	92 (T)	
STATISTICAL TESTS			
POLY 3		P=0.678	
POLY 1.5		P=0.678	
POLY 6		P=0.678	
COCH-ARM / FISHERS		P=0.686N	
MAX-ISO-POLY-3		P=1.000	

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

		Males
DOSE	0 mg/mL male	1 mg/mL male
Stomach, Glandular Inflammation Chronic		
LESION RATES		
OVERALL (a)	1/10 (10%)	0/10 (0%)
POLY-3 RATE (b)	1/10.00	0/10.00
POLY-3 PERCENT (g)	10%	0%
TERMINAL (d)	1/10 (10%)	0/10 (0%)
FIRST INCIDENCE	92 (T)	7
STATISTICAL TESTS		
POLY 3		P=0.500N
POLY 1.5		P=0.500N
POLY 6		P=0.500N
COCH-ARM / FISHERS		P=0.500N
MAX-ISO-POLY-3		P=0.158N

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

		Males
DOSE	0 mg/mL male	1 mg/mL male
Stomach, Glandular Mineral		
LESION RATES		
OVERALL (a)	1/10 (10%)	0/10 (0%)
POLY-3 RATE (b)	1/10.00	0/10.00
POLY-3 PERCENT (g)	10%	0%
TERMINAL (d)	1/10 (10%)	0/10 (0%)
FIRST INCIDENCE	92 (T)	<del></del>
STATISTICAL TESTS		
POLY 3		P=0.500N
POLY 1.5		P=0.500N
POLY 6		P=0.500N
COCH-ARM / FISHERS		P=0.500N
MAX-ISO-POLY-3		P=0.158N

Test Type: 14-WEEK Route: DOSED WATER Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

		Males
DOSE	0 mg/mL male	1 mg/mL male
Testis: Germinal Epithelium Degeneration		
LESION RATES		
OVERALL (a)	1/10 (10%)	1/10 (10%)
POLY-3 RATE (b)	1/10.00	1/10.00
POLY-3 PERCENT (g)	10%	10%
TERMINAL (d)	1/10 (10%)	1/10 (10%)
FIRST INCIDENCE	92 (T)	92 (T)
STATISTICAL TESTS		
POLY 3		P=0.760
POLY 1.5		P=0.760
POLY 6		P=0.760
COCH-ARM / FISHERS		P=0.763N
MAX-ISO-POLY-3		P=1.000

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

	Females				
DOSE	0 mg/mL female	0.1 mg/mL female	0.3 mg/mL female	1 mg/mL female	
Adrenal Cortex Hypertrophy Focal					
LESION RATES					
OVERALL (a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/10.00	
POLY-3 PERCENT (g)	10%	0%	0%	0%	
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	
FIRST INCIDENCE	92 (T)				
STATISTICAL TESTS					
POLY 3	(e)	(e)	(e)	P=0.500N	
POLY 1.5	(e)	(e)	(e)	P=0.500N	
POLY 6	(e)	(e)	(e)	P=0.500N	
COCH-ARM / FISHERS	P=0.379N	(e)	(e)	P=0.500N	
MAX-ISO-POLY-3	(e)	(e)	(e)	P=0.158N	

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

	Females				
DOSE	0 mg/mL female	0.1 mg/mL female	0.3 mg/mL female	1 mg/mL female	
Bone: Maxilla Inflammation Chronic					
LESION RATES					
OVERALL (a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/10.00	
POLY-3 PERCENT (g)	10%	0%	0%	0%	
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	
FIRST INCIDENCE	92 (T)			<del></del>	
STATISTICAL TESTS					
POLY 3	(e)	(e)	(e)	P=0.500N	
POLY 1.5	(e)	(e)	(e)	P=0.500N	
POLY 6	(e)	(e)	(e)	P=0.500N	
COCH-ARM / FISHERS	P=0.379N	(e)	(e)	P=0.500N	
MAX-ISO-POLY-3	(e)	(e)	(e)	P=0.158N	

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

	Females					
DOSE	0 mg/mL female	0.1 mg/mL female	0.3 mg/mL female	1 mg/mL female		
Clitoral Gland Infiltration Cellular Mononuc	clear Cell					
LESION RATES						
OVERALL (a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	4/10 (40%)		
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	4/10.00		
POLY-3 PERCENT (g)	10%	0%	0%	40%		
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	4/10 (40%)		
FIRST INCIDENCE	92 (T)			92 (T)		
STATISTICAL TESTS						
POLY 3	(e)	(e)	(e)	P=0.148		
POLY 1.5	(e)	(e)	(e)	P=0.148		
POLY 6	(e)	(e)	(e)	P=0.148		
COCH-ARM / FISHERS	P=0.117	(e)	(e)	P=0.152		
MAX-ISO-POLY-3	(e)	(e)	(e)	P=0.058		

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

	Females				
DOSE	0 mg/mL female	0.1 mg/mL female	0.3 mg/mL female	1 mg/mL female	
Clitoral Gland Inflammation Chronic					
LESION RATES					
OVERALL (a)	2/10 (20%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	
POLY-3 RATE (b)	2/10.00	0/0.00	0/0.00	0/10.00	
POLY-3 PERCENT (g)	20%	0%	0%	0%	
TERMINAL (d)	2/10 (20%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	
FIRST INCIDENCE	92 (T)			<del></del>	
STATISTICAL TESTS					
POLY 3	(e)	(e)	(e)	P=0.227N	
POLY 1.5	(e)	(e)	(e)	P=0.227N	
POLY 6	(e)	(e)	(e)	P=0.227N	
COCH-ARM / FISHERS	P=0.166N	(e)	(e)	P=0.237N	
MAX-ISO-POLY-3	(e)	(e)	(e)	P=0.066N	

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

Females				
DOSE	0 mg/mL female	0.1 mg/mL female	0.3 mg/mL female	1 mg/mL female
Heart Cardiomyopathy				
LESION RATES				
OVERALL (a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/10 (0%)
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/10.00
POLY-3 PERCENT (g)	10%	0%	0%	0%
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/10 (0%)
FIRST INCIDENCE	92 (T)			
STATISTICAL TESTS				
POLY 3	(e)	(e)	(e)	P=0.500N
POLY 1.5	(e)	(e)	(e)	P=0.500N
POLY 6	(e)	(e)	(e)	P=0.500N
COCH-ARM / FISHERS	P=0.379N	(e)	(e)	P=0.500N
MAX-ISO-POLY-3	(e)	(e)	(e)	P=0.158N

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

	Females					
DOSE	0 mg/mL female	0.1 mg/mL female	0.3 mg/mL female	1 mg/mL female		
Kidney Nephropathy Chronic Progr	essive					
LESION RATES						
OVERALL (a)	5/10 (50%)	0/0 (0%)	0/0 (0%)	2/10 (20%)		
POLY-3 RATE (b)	5/10.00	0/0.00	0/0.00	2/10.00		
POLY-3 PERCENT (g)	50%	0%	0%	20%		
TERMINAL (d)	5/10 (50%)	0/0 (0%)	0/0 (0%)	2/10 (20%)		
FIRST INCIDENCE	92 (T)			92 (T)		
STATISTICAL TESTS						
POLY 3	(e)	(e)	(e)	P=0.174N		
POLY 1.5	(e)	(e)	(e)	P=0.174N		
POLY 6	(e)	(e)	(e)	P=0.174N		
COCH-ARM / FISHERS	P=0.140N	(e)	(e)	P=0.175N		
MAX-ISO-POLY-3	(e)	(e)	(e)	P=0.079N		

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

	Females				
DOSE	0 mg/mL female	0.1 mg/mL female	0.3 mg/mL female	1 mg/mL female	
Liver Hepatodiaphragmatic Nodule	•				
LESION RATES					
OVERALL (a)	0/10 (0%)	0/0 (0%)	1/1 (100%)	0/10 (0%)	
POLY-3 RATE (b)	0/10.00	0/0.00	1/1.00	0/10.00	
POLY-3 PERCENT (g)	0%	0%	100%	0%	
TERMINAL (d)	0/10 (0%)	0/0 (0%)	1/1 (100%)	0/10 (0%)	
FIRST INCIDENCE			92 (T)		
STATISTICAL TESTS					
POLY 3	(e)	(e)	P=0.091	(e)	
POLY 1.5	(e)	(e)	P=0.091	(e)	
POLY 6	(e)	(e)	P=0.091	(e)	
COCH-ARM / FISHERS	P=0.631N	(e)	P=0.091	(e)	
MAX-ISO-POLY-3	(e)	(e)	P<0.001**	(e)	

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

 $Ionic\ Liquid:\ 1\text{-Butyl-}3\text{-methylimidazolium}\ Chloride$ 

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

Females				
DOSE	0 mg/mL female	0.1 mg/mL female	0.3 mg/mL female	1 mg/mL female
Lymph Node, Mandibular Hyperplasia Lymphocyte				
LESION RATES				
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	1/10.00
POLY-3 PERCENT (g)	0%	0%	0%	10%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	1/10 (10%)
FIRST INCIDENCE				92 (T)
STATISTICAL TESTS				
POLY 3	(e)	(e)	(e)	P=0.500
POLY 1.5	(e)	(e)	(e)	P=0.500
POLY 6	(e)	(e)	(e)	P=0.500
COCH-ARM / FISHERS	P=0.379	(e)	(e)	P=0.500
MAX-ISO-POLY-3	(e)	(e)	(e)	P=0.158

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

Females				
DOSE	0 mg/mL female	0.1 mg/mL female	0.3 mg/mL female	1 mg/mL female
Nose: Epithelium				
Inflammation Chronic				
LESION RATES				
OVERALL (a)	9/10 (90%)	10/10 (100%)	7/7 (100%)	0/10 (0%)
POLY-3 RATE (b)	9/10.00	10/10.00	7/7.00	0/10.00
POLY-3 PERCENT (g)	90%	100%	100%	0%
TERMINAL (d)	9/10 (90%)	10/10 (100%)	7/7 (100%)	0/10 (0%)
FIRST INCIDENCE	92 (T)	92 (T)	92 (T)	
STATISTICAL TESTS				
POLY 3	P<0.001N**	P=0.500	P=0.570	P<0.001N**
POLY 1.5	P<0.001N**	P=0.500	P=0.570	P<0.001N**
POLY 6	P<0.001N**	P=0.500	P=0.570	P<0.001N**
COCH-ARM / FISHERS	P<0.001N**	P=0.500	P=0.588	P<0.001N**
MAX-ISO-POLY-3	P<0.001N**	P=0.158	P=0.222	P<0.001N**

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

	Females				
DOSE	0 mg/mL female	0.1 mg/mL female	0.3 mg/mL female	1 mg/mL female	
Name Office of the Faith of the state of					
Nose: Olfactory Epithelium Accumulation, Hyaline Droplet	i				
LESION RATES					
OVERALL (a)	5/10 (50%)	0/10 (0%)	0/7 (0%)	4/10 (40%)	
POLY-3 RATE (b)	5/10.00	0/10.00	0/7.00	4/10.00	
POLY-3 PERCENT (g)	50%	0%	0%	40%	
TERMINAL (d)	5/10 (50%)	0/10 (0%)	0/7 (0%)	4/10 (40%)	
FIRST INCIDENCE	92 (T)			92 (T)	
STATISTICAL TESTS					
POLY 3	P=0.313	P=0.008N**	P=0.030N*	P=0.500N	
POLY 1.5	P=0.313	P=0.008N**	P=0.030N*	P=0.500N	
POLY 6	P=0.313	P=0.008N**	P=0.030N*	P=0.500N	
COCH-ARM / FISHERS	P=0.331	P=0.016N*	P=0.041N*	P=0.500N	
MAX-ISO-POLY-3	P=0.020N*	P<0.001N**	P=0.011N*	P=0.332N	

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

	Females				
DOSE	0 mg/mL female	0.1 mg/mL female	0.3 mg/mL female	1 mg/mL female	
Nose: Respiratory Epithelium					
Inflammation Chronic					
LESION RATES					
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/7 (0%)	0/10 (0%)	
POLY-3 RATE (b)	0/10.00	0/10.00	0/7.00	0/10.00	
POLY-3 PERCENT (g)	0%	0%	0%	0%	
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/7 (0%)	0/10 (0%)	
FIRST INCIDENCE					
STATISTICAL TESTS					
POLY 3	(n)	(n)	(n)	(n)	
POLY 1.5	(n)	(n)	(n)	(n)	
POLY 6	(n)	(n)	(n)	(n)	
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

Females						
DOSE	0 mg/mL female	0.1 mg/mL female	0.3 mg/mL female	1 mg/mL female		
Nose: Transitional Epithelium Inflammation Chronic						
LESION RATES						
OVERALL (a)	0/10 (0%)	0/10 (0%)	0/7 (0%)	0/10 (0%)		
POLY-3 RATE (b)	0/10.00	0/10.00	0/7.00	0/10.00		
POLY-3 PERCENT (g)	0%	0%	0%	0%		
TERMINAL (d)	0/10 (0%)	0/10 (0%)	0/7 (0%)	0/10 (0%)		
FIRST INCIDENCE				<del></del>		
STATISTICAL TESTS						
POLY 3	(n)	(n)	(n)	(n)		
POLY 1.5	(n)	(n)	(n)	(n)		
POLY 6	(n)	(n)	(n)	(n)		
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)		
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)		

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

	Females				
DOSE	0 mg/mL female	0.1 mg/mL female	0.3 mg/mL female	1 mg/mL female	
Ovary: Follicle Cyst					
LESION RATES					
OVERALL (a)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	
POLY-3 RATE (b)	1/10.00	0/0.00	0/0.00	0/10.00	
POLY-3 PERCENT (g)	10%	0%	0%	0%	
TERMINAL (d)	1/10 (10%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	
FIRST INCIDENCE	92 (T)			<del></del>	
STATISTICAL TESTS					
POLY 3	(e)	(e)	(e)	P=0.500N	
POLY 1.5	(e)	(e)	(e)	P=0.500N	
POLY 6	(e)	(e)	(e)	P=0.500N	
COCH-ARM / FISHERS	P=0.379N	(e)	(e)	P=0.500N	
MAX-ISO-POLY-3	(e)	(e)	(e)	P=0.158N	

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

Females				
DOSE	0 mg/mL female	0.1 mg/mL female	0.3 mg/mL female	1 mg/mL female
Pancreas: Acinus Atrophy				
LESION RATES				
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/10.00
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)
FIRST INCIDENCE				
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

Females				
DOSE	0 mg/mL female	0.1 mg/mL female	0.3 mg/mL female	1 mg/mL female
Stomach, Glandular				
Inflammation Chronic				
LESION RATES				
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/10.00
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)
FIRST INCIDENCE				
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

	Females				
DOSE	0 mg/mL female	0.1 mg/mL female	0.3 mg/mL female	1 mg/mL female	
Stomach, Glandular Mineral					
LESION RATES					
OVERALL (a)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	
POLY-3 RATE (b)	0/10.00	0/0.00	0/0.00	0/10.00	
POLY-3 PERCENT (g)	0%	0%	0%	0%	
TERMINAL (d)	0/10 (0%)	0/0 (0%)	0/0 (0%)	0/10 (0%)	
FIRST INCIDENCE					
STATISTICAL TESTS					
POLY 3	(n)	(n)	(n)	(n)	
POLY 1.5	(n)	(n)	(n)	(n)	
POLY 6	(n)	(n)	(n)	(n)	
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	

Test Type: 14-WEEK
Route: DOSED WATER
Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

 $Ionic\ Liquid:\ 1\text{-Butyl-}3\text{-methylimidazolium}\ Chloride$ 

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

	Females				
DOSE	0 mg/mL female	0.1 mg/mL female	0.3 mg/mL female	1 mg/mL female	
Testis: Germinal Epithelium					
Degeneration					
LESION RATES					
OVERALL (a)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	
POLY-3 RATE (b)	0/0.00	0/0.00	0/0.00	0/0.00	
POLY-3 PERCENT (g)	0%	0%	0%	0%	
TERMINAL (d)	0/0 (0%)	0/0 (0%)	0/0 (0%)	0/0 (0%)	
FIRST INCIDENCE					
STATISTICAL TESTS					
POLY 3	(n)	(n)	(n)	(n)	
POLY 1.5	(n)	(n)	(n)	(n)	
POLY 6	(n)	(n)	(n)	(n)	
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)	
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)	

Test Type: 14-WEEK

Route: DOSED WATER

Species/Strain: RATS/HSD

#### P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Ionic Liquid: 1-Butyl-3-methylimidazolium Chloride

**CAS Number:** 79917-90-1

Date Report Requested: 10/05/2020 Time Report Requested: 12:59:00 First Dose M/F: 04/25/13 / 04/26/13

Lab: BAT

#### **LEGEND**

(a)	Number of tumor-bearing animals/number of animals examined at site.

- (b) Number of tumor-bearing animals/Poly-3 number
- (d) Observed incidence at terminal kill.
- (e) Value of statistic cannot be computed.
- (f) Beneath the control incidence are the P-values associated with the trend test. Beneath the dosed group incidence are the P-values corresponding to
  - pairwise comparisons between the controls and that dosed group.
- (g) Poly-3 adjusted lifetime tumor incidence.
- (n) No statistics are calculated if all dose groups have fewer than two tumors.
- (I) Interim sacrifice
- (T) Terminal sacrifice
- # Tumor rates based on numbers of animals necropsied.
- \* To the right of any statistical result, indicates significance at (P<=0.05).</li>
   \*\* To the right of any statistical result, indicates significance at (P<=0.01).</li>
- N Indicates a negative trend for all tests

The Cochran-Armitage and Fishers exact tests compare directly the overall incidence rates.

\*\*\* END OF REPORT \*\*\*