

Experiment Number: 04049 - 01
Test Type: 28-DAY
Route: GAVAGE
Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid
CAS Number: 375-95-1

Date Report Requested: 02/06/2018
Time Report Requested: 12:36:11
First Dose M/F: 02/02/12 / 02/03/12
Lab: BAT

PFNA_Final 1

NTP Study Number: C04049
Lock Date: 01/22/2016
Cage Range: ALL
Date Range: ALL
Reasons For Removal: ALL
Removal Date Range: ALL
Treatment Groups: Include ALL
Study Gender: Both
TDMSE Version: 3.0.2.3_002
PWG Approval Date: NONE

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 701

TRT#: 1

SEX: Male

DAY ON TEST: 29

DOSE: 0 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204905

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Kidney	* Liver	* Lung
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Nose	Respirat Epith	Inflammation	Chronic Active, Minimal
--------	----------------	--------------	-------------------------

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 702

TRT#: 1

SEX: Male

DAY ON TEST: 29

DOSE: 0 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204906

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Epididymis | * Esophagus |
| * Eye | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Liver | * Lymph Node, Mandibular | * Lymph Node, Mesenteric |
| * Mammary Gland | * Nose | * Pancreas | * Pituitary Gland |
| * Preputial Gland | * Prostate | * Salivary Glands | * Seminal Vesicle |
| * Skin | * Spleen | * Stomach, Forestomach | * Stomach, Glandular |
| * Testes | * Thymus | * Thyroid Gland | * Trachea |
| * Urinary Bladder | | | |

MISSING

- * Parathyroid Gland

OBSERVATIONS

- | | | |
|----------|-----------------------|-----------------------|
| * Kidney | Nephropathy | Chronicprogr, Minimal |
| * Lung | Infiltration Cellular | Mixed Cell, Minimal |

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 703

TRT#: 1

SEX: Male

DAY ON TEST: 29

DOSE: 0 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204907

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Liver	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Kidney

Nephropathy

Chronicprogr, Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 705

TRT#: 1

SEX: Male

DAY ON TEST: 29

DOSE: 0 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204909

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Epididymis | * Esophagus |
| * Eye | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Liver | * Lung | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric | * Mammary Gland | * Nose | * Pancreas |
| * Parathyroid Gland | * Pituitary Gland | * Preputial Gland | * Prostate |
| * Salivary Glands | * Seminal Vesicle | * Skin | * Spleen |
| * Stomach, Forestomach | * Stomach, Glandular | * Testes | * Thymus |
| * Thyroid Gland | * Trachea | * Urinary Bladder | |

OBSERVATIONS

* Kidney

Nephropathy

Chronicprogr, Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 706

TRT#: 1

SEX: Male

DAY ON TEST: 29

DOSE: 0 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204910

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Epididymis | * Esophagus |
| * Eye | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Lung | * Lymph Node, Mandibular | * Lymph Node, Mesenteric |
| * Mammary Gland | * Nose | * Pancreas | * Pituitary Gland |
| * Preputial Gland | * Prostate | * Salivary Glands | * Seminal Vesicle |
| * Skin | * Spleen | * Stomach, Forestomach | * Stomach, Glandular |
| * Testes | * Thymus | * Thyroid Gland | * Trachea |
| * Urinary Bladder | | | |

MISSING

- * Parathyroid Gland

OBSERVATIONS

- | | | |
|----------|-----------------------|---------------------|
| * Kidney | Nephropathy | Chronicprogr, Mild |
| * Liver | Infiltration Cellular | Mixed Cell, Minimal |

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 707

TRT#: 1

SEX: Male

DAY ON TEST: 29

DOSE: 0 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204911

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Epididymis | * Esophagus |
| * Eye | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Liver | * Lung | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric | * Mammary Gland | * Nose | * Pancreas |
| * Pituitary Gland | * Preputial Gland | * Prostate | * Salivary Glands |
| * Seminal Vesicle | * Skin | * Spleen | * Stomach, Forestomach |
| * Stomach, Glandular | * Testes | * Thymus | * Thyroid Gland |
| * Trachea | * Urinary Bladder | | |

MISSING

- * Parathyroid Gland

OBSERVATIONS

- | | | |
|----------|-------------|-----------------------|
| * Kidney | Nephropathy | Chronicprogr, Minimal |
|----------|-------------|-----------------------|

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 708

TRT#: 1

SEX: Male

DAY ON TEST: 29

DOSE: 0 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204912

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Epididymis | * Esophagus |
| * Eye | * Harderian Gland | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Lymph Node, Mandibular | * Lymph Node, Mesenteric | * Mammary Gland | * Nose |
| * Pancreas | * Parathyroid Gland | * Pituitary Gland | * Preputial Gland |
| * Prostate | * Salivary Glands | * Seminal Vesicle | * Skin |
| * Spleen | * Stomach, Forestomach | * Stomach, Glandular | * Testes |
| * Thymus | * Thyroid Gland | * Trachea | * Urinary Bladder |

OBSERVATIONS

- | | | |
|----------|-----------------------|-----------------------|
| * Heart | Infiltration Cellular | Mixed Cell, Minimal |
| * Kidney | Nephropathy | Chronicprogr, Minimal |
| * Liver | Infiltration Cellular | Mixed Cell, Minimal |
| * Lung | Infiltration Cellular | Mixed Cell, Minimal |

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 709

TRT#: 1

SEX: Male

DAY ON TEST: 29

DOSE: 0 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204913

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Epididymis | * Esophagus |
| * Eye | * Harderian Gland | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Liver | * Lung | * Lymph Node, Mandibular | * Lymph Node, Mesenteric |
| * Mammary Gland | * Nose | * Pancreas | * Parathyroid Gland |
| * Pituitary Gland | * Preputial Gland | * Prostate | * Salivary Glands |
| * Seminal Vesicle | * Skin | * Spleen | * Stomach, Forestomach |
| * Stomach, Glandular | * Testes | * Thymus | * Thyroid Gland |
| * Trachea | * Urinary Bladder | | |

OBSERVATIONS

- | | | |
|----------|-----------------------|-----------------------|
| * Heart | Infiltration Cellular | Mixed Cell, Minimal |
| * Kidney | Nephropathy | Chronicprogr, Minimal |

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 710

TRT#: 1

SEX: Male

DAY ON TEST: 29

DOSE: 0 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204914

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Kidney	* Liver	* Lung
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 711

TRT#: 3

SEX: Male

DAY ON TEST: 29

DOSE: 0.625mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204915

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow
Nose
* Testes

Epididymis
* Pancreas
Thymus

Lymph Node, Mandibular
Spleen
* Thyroid Gland

Lymph Node, Mesenteric
Stomach, Forestomach

OBSERVATIONS

* Kidney
* Liver

Hepatocyte

Nephropathy
Cytoplasmic Alteration

Chronicprogr, Minimal
Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 712

TRT#: 3

SEX: Male

DAY ON TEST: 29

DOSE: 0.625mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204916

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow

Epididymis

Lymph Node, Mandibular

Lymph Node, Mesenteric

Nose

* Pancreas

Spleen

Stomach, Forestomach

* Testes

Thymus

* Thyroid Gland

OBSERVATIONS

* Kidney

Nephropathy

Chronicprogr, Minimal

* Liver

Hepatocyte

Cytoplasmic Alteration

Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 713

TRT#: 3

SEX: Male

DAY ON TEST: 29

DOSE: 0.625mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204917

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow	Epididymis	Lymph Node, Mandibular	Lymph Node, Mesenteric
Nose	* Pancreas	Spleen	Stomach, Forestomach
* Testes	Thymus	* Thyroid Gland	

OBSERVATIONS

* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver	Hepatocyte	Cytoplasmic Alteration	Mild
	Hepatocyte	Hypertrophy	Mild

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 714

TRT#: 3

SEX: Male

DAY ON TEST: 29

DOSE: 0.625mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204918

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow

Epididymis

Lymph Node, Mandibular

Lymph Node, Mesenteric

Nose

* Pancreas

Spleen

Stomach, Forestomach

* Testes

Thymus

* Thyroid Gland

OBSERVATIONS

* Kidney

Nephropathy

Chronicprogr, Minimal

* Liver

Hepatocyte

Cytoplasmic Alteration

Minimal

Hepatocyte

Hypertrophy

Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 715

TRT#: 3

SEX: Male

DAY ON TEST: 29

DOSE: 0.625mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204919

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow
Nose
* Testes

Epididymis
* Pancreas
Thymus

Lymph Node, Mandibular
Spleen
* Thyroid Gland

Lymph Node, Mesenteric
Stomach, Forestomach

OBSERVATIONS

* Kidney
* Liver

Hepatocyte
Hepatocyte

Nephropathy
Cytoplasmic Alteration
Hypertrophy

Chronicprogr, Minimal
Minimal
Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 716

TRT#: 3

SEX: Male

DAY ON TEST: 29

DOSE: 0.625mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204920

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow	Epididymis	Lymph Node, Mandibular	Lymph Node, Mesenteric
* Pancreas	Spleen	Stomach, Forestomach	* Testes
Thymus	* Thyroid Gland		

OBSERVATIONS

* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver	Hepatocyte	Cytoplasmic Alteration	Minimal
Nose	Respirat Epith	Inflammation	Chronic Active, Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 717

TRT#: 3

SEX: Male

DAY ON TEST: 29

DOSE: 0.625mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204921

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow	Epididymis	* Kidney	Lymph Node, Mandibular
Lymph Node, Mesenteric	* Pancreas	Spleen	Stomach, Forestomach
* Testes	Thymus	* Thyroid Gland	

OBSERVATIONS

* Liver	Hepatocyte	Cytoplasmic Alteration	Mild
	Hepatocyte	Hypertrophy	Mild
Nose	Respirat Epith	Inflammation	Chronic Active, Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 718

TRT#: 3

SEX: Male

DAY ON TEST: 29

DOSE: 0.625mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204922

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow	Epididymis	* Kidney	Lymph Node, Mandibular
Lymph Node, Mesenteric	* Pancreas	Spleen	Stomach, Forestomach
* Testes	Thymus	* Thyroid Gland	

OBSERVATIONS

* Liver	Hepatocyte	Cytoplasmic Alteration	Mild
	Hepatocyte	Hypertrophy	Mild
Nose	Respirat Epith	Inflammation	Chronic Active, Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 719

TRT#: 3

SEX: Male

DAY ON TEST: 29

DOSE: 0.625mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204923

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow	Epididymis	Lymph Node, Mandibular	Lymph Node, Mesenteric
* Pancreas	Spleen	Stomach, Forestomach	* Testes
Thymus	* Thyroid Gland		

OBSERVATIONS

* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver	Hepatocyte	Cytoplasmic Alteration	Mild
	Hepatocyte	Hypertrophy	Marked
Nose	Respirat Epith	Inflammation	Chronic Active, Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 720

TRT#: 3

SEX: Male

DAY ON TEST: 29

DOSE: 0.625mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204924

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow	Epididymis	Lymph Node, Mandibular	Lymph Node, Mesenteric
* Pancreas	Spleen	Stomach, Forestomach	* Testes
Thymus	* Thyroid Gland		

OBSERVATIONS

* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver	Hepatocyte	Cytoplasmic Alteration	Mild
	Hepatocyte	Hypertrophy	Marked
Nose	Respirat Epith	Inflammation	Chronic Active, Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 721

TRT#: 5

SEX: Male

DAY ON TEST: 29

DOSE: 1.25 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204925

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Bone Marrow
Nose
* Testes

* Epididymis
* Pancreas
* Thymus

* Lymph Node, Mandibular
Spleen
* Thyroid Gland

* Lymph Node, Mesenteric
* Stomach, Forestomach

OBSERVATIONS

* Kidney
* Liver

Hepatocyte
Hepatocyte

Nephropathy
Cytoplasmic Alteration
Hypertrophy

Chronicprogr, Minimal
Marked
Marked

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 722

TRT#: 5

SEX: Male

DAY ON TEST: 29

DOSE: 1.25 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204926

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Bone Marrow

* Lymph Node, Mesenteric

* Stomach, Forestomach

* Epididymis

Nose

* Testes

* Kidney

* Pancreas

* Thymus

* Lymph Node, Mandibular

Spleen

* Thyroid Gland

OBSERVATIONS

* Liver

Hepatocyte

Hepatocyte

Hepatocyte

Hepatocyte

Cytoplasmic Alteration

Hypertrophy

Infiltration Cellular

Necrosis

Vacuolization Cytoplasmic

Marked

Marked

Mixed Cell, Minimal

Minimal

Mild

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 723

TRT#: 5

SEX: Male

DAY ON TEST: 29

DOSE: 1.25 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204927

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Bone Marrow

* Epididymis

* Kidney

* Lymph Node, Mandibular

* Lymph Node, Mesenteric

Nose

* Pancreas

Spleen

* Stomach, Forestomach

* Testes

* Thymus

* Thyroid Gland

OBSERVATIONS

* Liver

Hepatocyte

Cytoplasmic Alteration

Marked

Hepatocyte

Hypertrophy

Marked

Hepatocyte

Vacuolization Cytoplasmic

Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 724

TRT#: 5

SEX: Male

DAY ON TEST: 29

DOSE: 1.25 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204928

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Bone Marrow
Nose
* Testes

* Epididymis
* Pancreas
* Thymus

* Lymph Node, Mandibular
Spleen
* Thyroid Gland

* Lymph Node, Mesenteric
* Stomach, Forestomach

OBSERVATIONS

* Kidney
* Liver

Hepatocyte
Hepatocyte
Hepatocyte

Nephropathy
Cytoplasmic Alteration
Hypertrophy
Vacuolization Cytoplasmic

Chronicprogr, Minimal
Marked
Marked
Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 725

TRT#: 5

SEX: Male

DAY ON TEST: 29

DOSE: 1.25 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204929

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Bone Marrow

* Lymph Node, Mesenteric

* Stomach, Forestomach

* Epididymis

Nose

* Testes

* Kidney

* Pancreas

* Thymus

* Lymph Node, Mandibular

Spleen

* Thyroid Gland

OBSERVATIONS

* Liver

Hepatocyte

Hepatocyte

Hepatocyte

Cytoplasmic Alteration

Hypertrophy

Vacuolization Cytoplasmic

Marked

Marked

Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 726

TRT#: 5

SEX: Male

DAY ON TEST: 29

DOSE: 1.25 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204930

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Bone Marrow
Nose
* Testes

* Epididymis
* Pancreas
* Thymus

* Lymph Node, Mandibular
Spleen
* Thyroid Gland

* Lymph Node, Mesenteric
* Stomach, Forestomach

OBSERVATIONS

* Kidney
* Liver

Hepatocyte
Hepatocyte

Nephropathy
Cytoplasmic Alteration
Hypertrophy

Chronicprogr, Minimal
Marked
Marked

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 727

TRT#: 5

SEX: Male

DAY ON TEST: 29

DOSE: 1.25 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204931

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Bone Marrow

* Epididymis

* Kidney

* Lymph Node, Mandibular

* Lymph Node, Mesenteric

Nose

* Pancreas

Spleen

* Stomach, Forestomach

* Thymus

* Thyroid Gland

OBSERVATIONS

* Liver

Hepatocyte

Cytoplasmic Alteration

Marked

Hepatocyte

Hypertrophy

Marked

Hepatocyte

Vacuolization Cytoplasmic

Minimal

* Testes

Interstit Cell

Atrophy

Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 728

TRT#: 5

SEX: Male

DAY ON TEST: 29

DOSE: 1.25 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204932

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Bone Marrow
Nose
* Testes

* Epididymis
* Pancreas
* Thymus

* Lymph Node, Mandibular
Spleen
* Thyroid Gland

* Lymph Node, Mesenteric
* Stomach, Forestomach

OBSERVATIONS

* Kidney
* Liver

Hepatocyte
Hepatocyte
Hepatocyte

Nephropathy
Cytoplasmic Alteration
Hypertrophy
Vacuolization Cytoplasmic

Chronicprogr, Minimal
Marked
Marked
Moderate

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 729

TRT#: 5

SEX: Male

DAY ON TEST: 29

DOSE: 1.25 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204933

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Bone Marrow

* Epididymis

* Kidney

* Lymph Node, Mandibular

* Lymph Node, Mesenteric

Nose

* Pancreas

Spleen

* Stomach, Forestomach

* Testes

* Thymus

* Thyroid Gland

OBSERVATIONS

* Liver

Hepatocyte

Cytoplasmic Alteration

Moderate

Hepatocyte

Hypertrophy

Marked

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 730

TRT#: 5

SEX: Male

DAY ON TEST: 29

DOSE: 1.25 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204934

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Bone Marrow
Nose
* Testes

* Epididymis
* Pancreas
* Thymus

* Lymph Node, Mandibular
Spleen
* Thyroid Gland

* Lymph Node, Mesenteric
* Stomach, Forestomach

OBSERVATIONS

* Kidney
* Liver

Hepatocyte
Hepatocyte

Nephropathy
Cytoplasmic Alteration
Hypertrophy

Chronicprogr, Minimal
Mild
Marked

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 731

TRT#: 7

SEX: Male

DAY ON TEST: 29

DOSE: 2.5 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204935

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- * Adrenal Cortex
- * Brain
- * Heart
- * Intestine Small, Duodenum
- * Lymph Node, Mandibular
- * Pituitary Gland
- * Seminal Vesicle
- * Thyroid Gland
- * Adrenal Medulla
- * Esophagus
- * Intestine Large, Cecum
- * Intestine Small, Ileum
- * Mammary Gland
- * Preputial Gland
- * Skin
- * Trachea
- * Blood Vessel
- * Eye
- * Intestine Large, Colon
- * Intestine Small, Jejunum
- * Nose
- * Prostate
- * Spleen
- * Urinary Bladder
- * Bone
- * Harderian Gland
- * Intestine Large, Rectum
- * Lung
- * Pancreas
- * Salivary Glands
- * Stomach, Glandular

MISSING

- * Parathyroid Gland

OBSERVATIONS

- * Bone Marrow
 - * Epididymis
 - * Kidney
 - * Liver
 - * Lymph Node, Mesenteric
 - * Stomach, Forestomach
 - * Testes
 - * Thymus
- | | | | |
|--|----------------|---------------------------|-----------------------|
| | Duct | Hypocellularity | Moderate |
| | | Exfoliated Germ Cell | Moderate |
| | | Hypospermia | Mild |
| | | Nephropathy | Chronicprogr, Minimal |
| | Hepatocyte | Cytoplasmic Alteration | Marked |
| | Hepatocyte | Hypertrophy | Marked |
| | Hepatocyte | Necrosis | Minimal |
| | Hepatocyte | Vacuolization Cytoplasmic | Marked |
| | | Atrophy | Mild |
| | Epithelium | Hyperplasia | Minimal |
| | Interstit Cell | Atrophy | Mild |
| | Germinal Epith | Degeneration | Mild |
| | Seminif Tub | Spermatid Retention | Moderate |
| | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 732

TRT#: 7

SEX: Male

DAY ON TEST: 29

DOSE: 2.5 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204936

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Esophagus | * Eye | * Harderian Gland |
| * Heart | * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Lung |
| * Lymph Node, Mandibular | * Lymph Node, Mesenteric | * Mammary Gland | * Nose |
| * Pancreas | * Pituitary Gland | * Preputial Gland | * Prostate |
| * Salivary Glands | * Seminal Vesicle | * Skin | * Spleen |
| * Stomach, Glandular | * Thyroid Gland | * Trachea | * Urinary Bladder |

MISSING

- * Parathyroid Gland

OBSERVATIONS

- | | | | |
|------------------------|----------------|---------------------------|-----------------------|
| * Bone Marrow | | Hypocellularity | Moderate |
| * Epididymis | Duct | Exfoliated Germ Cell | Mild |
| * Kidney | | Nephropathy | Chronicprogr, Minimal |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Marked |
| | Hepatocyte | Hypertrophy | Marked |
| | Hepatocyte | Necrosis | Mild |
| | Hepatocyte | Vacuolization Cytoplasmic | Marked |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Moderate |
| | | Inflammation | Chronic Active, Mild |
| * Testes | Interstit Cell | Atrophy | Mild |
| | Germinal Epith | Degeneration | Minimal |
| | Seminif Tub | Spermatid Retention | Moderate |
| * Thymus | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 733

TRT#: 7

SEX: Male

DAY ON TEST: 29

DOSE: 2.5 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204937

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Epididymis | * Esophagus | * Eye |
| * Harderian Gland | * Heart | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Lung | * Lymph Node, Mandibular | * Lymph Node, Mesenteric | * Mammary Gland |
| * Nose | * Pancreas | * Parathyroid Gland | * Pituitary Gland |
| * Preputial Gland | * Prostate | * Salivary Glands | * Seminal Vesicle |
| * Skin | * Spleen | * Stomach, Forestomach | * Stomach, Glandular |
| * Thyroid Gland | * Trachea | * Urinary Bladder | |

OBSERVATIONS

- | | | | |
|---------------|----------------|------------------------|-----------------------|
| * Bone Marrow | | Hypocellularity | Moderate |
| * Kidney | | Nephropathy | Chronicprogr, Minimal |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Marked |
| | Hepatocyte | Hypertrophy | Marked |
| * Testes | Interstit Cell | Atrophy | Minimal |
| * Thymus | | Atrophy | Mild |

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 734

TRT#: 7

SEX: Male

DAY ON TEST: 29

DOSE: 2.5 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204938

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Epididymis | * Esophagus | * Eye |
| * Harderian Gland | * Heart | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Kidney | * Lung | * Lymph Node, Mandibular | * Lymph Node, Mesenteric |
| * Mammary Gland | * Nose | * Pancreas | * Parathyroid Gland |
| * Pituitary Gland | * Preputial Gland | * Prostate | * Salivary Glands |
| * Seminal Vesicle | * Skin | * Spleen | * Stomach, Forestomach |
| * Stomach, Glandular | * Thyroid Gland | * Trachea | * Urinary Bladder |

OBSERVATIONS

- | | | | |
|---------------|----------------|---------------------------|---------|
| * Bone Marrow | | Hypocellularity | Marked |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Marked |
| | Hepatocyte | Hypertrophy | Marked |
| | Hepatocyte | Vacuolization Cytoplasmic | Marked |
| * Testes | Interstit Cell | Atrophy | Minimal |
| * Thymus | | Atrophy | Mild |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 735

TRT#: 7

SEX: Male

DAY ON TEST: 29

DOSE: 2.5 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204939

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Esophagus | * Eye | * Harderian Gland |
| * Heart | * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Kidney |
| * Lung | * Lymph Node, Mandibular | * Lymph Node, Mesenteric | * Mammary Gland |
| * Nose | * Pancreas | * Pituitary Gland | * Preputial Gland |
| * Prostate | * Salivary Glands | * Seminal Vesicle | * Skin |
| * Spleen | * Stomach, Forestomach | * Stomach, Glandular | * Thyroid Gland |
| * Trachea | * Urinary Bladder | | |

MISSING

- * Parathyroid Gland

OBSERVATIONS

- | | | | |
|---------------|----------------|---------------------------|----------|
| * Bone Marrow | | Hypocellularity | Moderate |
| * Epididymis | Duct | Exfoliated Germ Cell | Mild |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Marked |
| | Hepatocyte | Hypertrophy | Marked |
| | Hepatocyte | Necrosis | Minimal |
| | Hepatocyte | Vacuolization Cytoplasmic | Marked |
| * Testes | Interstit Cell | Atrophy | Mild |
| | Germinal Epith | Degeneration | Mild |
| | Seminif Tub | Spermatid Retention | Moderate |
| * Thymus | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 736

TRT#: 7

SEX: Male

DAY ON TEST: 29

DOSE: 2.5 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204940

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- * Adrenal Cortex
- * Adrenal Medulla
- * Blood Vessel
- * Bone
- * Brain
- * Esophagus
- * Eye
- * Harderian Gland
- * Heart
- * Intestine Large, Cecum
- * Intestine Large, Colon
- * Intestine Large, Rectum
- * Intestine Small, Duodenum
- * Intestine Small, Ileum
- * Intestine Small, Jejunum
- * Lung
- * Lymph Node, Mandibular
- * Mammary Gland
- * Nose
- * Pancreas
- * Parathyroid Gland
- * Pituitary Gland
- * Preputial Gland
- * Prostate
- * Salivary Glands
- * Seminal Vesicle
- * Skin
- * Spleen
- * Stomach, Forestomach
- * Stomach, Glandular
- * Thyroid Gland
- * Trachea
- * Urinary Bladder

OBSERVATIONS

- * Bone Marrow
 - * Epididymis
 - * Kidney
 - * Liver
 - * Lymph Node, Mesenteric
 - * Testes
 - * Thymus
- | | | | |
|--|----------------|---------------------------|-----------------------|
| | Duct | Hypocellularity | Marked |
| | Hepatocyte | Exfoliated Germ Cell | Moderate |
| | Hepatocyte | Nephropathy | Chronicprogr, Minimal |
| | Hepatocyte | Cytoplasmic Alteration | Marked |
| | Hepatocyte | Hypertrophy | Marked |
| | | Necrosis | Minimal |
| | | Vacuolization Cytoplasmic | Marked |
| | | Atrophy | Marked |
| | Interstit Cell | Atrophy | Mild |
| | Germinal Epith | Degeneration | Mild |
| | Seminif Tub | Spermatid Retention | Moderate |
| | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 737

TRT#: 7

SEX: Male

DAY ON TEST: 29

DOSE: 2.5 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204941

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Epididymis | * Esophagus | * Eye |
| * Harderian Gland | * Heart | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Kidney | * Lung | * Lymph Node, Mandibular | * Lymph Node, Mesenteric |
| * Mammary Gland | * Nose | * Pancreas | * Parathyroid Gland |
| * Pituitary Gland | * Preputial Gland | * Prostate | * Salivary Glands |
| * Seminal Vesicle | * Skin | * Spleen | * Stomach, Glandular |
| * Thyroid Gland | * Trachea | * Urinary Bladder | |

OBSERVATIONS

- | | | | |
|------------------------|----------------|---------------------------|----------------------|
| * Bone Marrow | | Hypocellularity | Marked |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Marked |
| | Hepatocyte | Hypertrophy | Marked |
| | Hepatocyte | Vacuolization Cytoplasmic | Moderate |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Mild |
| | | Inflammation | Chronic Active, Mild |
| * Testes | Interstit Cell | Atrophy | Mild |
| * Thymus | | Atrophy | Moderate |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 738

TRT#: 7

SEX: Male

DAY ON TEST: 29

DOSE: 2.5 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204942

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Epididymis | * Esophagus | * Eye |
| * Harderian Gland | * Heart | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Lung | * Lymph Node, Mandibular | * Lymph Node, Mesenteric | * Mammary Gland |
| * Nose | * Pancreas | * Parathyroid Gland | * Pituitary Gland |
| * Preputial Gland | * Prostate | * Salivary Glands | * Seminal Vesicle |
| * Skin | * Spleen | * Stomach, Glandular | * Thyroid Gland |
| * Trachea | * Urinary Bladder | | |

OBSERVATIONS

- | | | | |
|------------------------|----------------|---------------------------|-----------------------|
| * Bone Marrow | | Hypocellularity | Moderate |
| * Kidney | | Nephropathy | Chronicprogr, Minimal |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Marked |
| | Hepatocyte | Hypertrophy | Marked |
| | Hepatocyte | Vacuolization Cytoplasmic | Marked |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Mild |
| | | Inflammation | Chronic Active, Mild |
| | | Ulcer | Minimal |
| * Testes | Interstit Cell | Atrophy | Minimal |
| * Thymus | | Atrophy | Mild |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 739

TRT#: 7

SEX: Male

DAY ON TEST: 29

DOSE: 2.5 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204943

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Esophagus | * Eye | * Harderian Gland |
| * Heart | * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Kidney |
| * Lung | * Mammary Gland | * Nose | * Pancreas |
| * Parathyroid Gland | * Pituitary Gland | * Preputial Gland | * Prostate |
| * Salivary Glands | * Seminal Vesicle | * Skin | * Spleen |
| * Stomach, Glandular | * Thyroid Gland | * Trachea | * Urinary Bladder |

OBSERVATIONS

- | | | | |
|--------------------------|-------------------|---------------------------|----------------------|
| * Bone Marrow | | Hypocellularity | Moderate |
| * Epididymis | Duct | Exfoliated Germ Cell | Mild |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Marked |
| | Hepatocyte | Hypertrophy | Marked |
| | Hepatocyte | Vacuolization Cytoplasmic | Marked |
| * Lymph Node, Mandibular | | Atrophy | Minimal |
| * Lymph Node, Mesenteric | | Atrophy | Moderate |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Marked |
| | | Inflammation | Chronic Active, Mild |
| * Testes | Interstitial Cell | Atrophy | Mild |
| | Germinal Epith | Degeneration | Mild |
| | Seminif Tub | Spermatid Retention | Mild |
| * Thymus | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 740

TRT#: 7

SEX: Male

DAY ON TEST: 29

DOSE: 2.5 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204944

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- * Adrenal Cortex
- * Brain
- * Heart
- * Intestine Small, Duodenum
- * Lymph Node, Mesenteric
- * Parathyroid Gland
- * Salivary Glands
- * Stomach, Glandular
- * Adrenal Medulla
- * Esophagus
- * Intestine Large, Cecum
- * Intestine Small, Ileum
- * Mammary Gland
- * Pituitary Gland
- * Seminal Vesicle
- * Thyroid Gland
- * Blood Vessel
- * Eye
- * Intestine Large, Colon
- * Intestine Small, Jejunum
- * Nose
- * Preputial Gland
- * Skin
- * Trachea
- * Bone
- * Harderian Gland
- * Intestine Large, Rectum
- * Lung
- * Pancreas
- * Prostate
- * Spleen
- * Urinary Bladder

OBSERVATIONS

- * Bone Marrow
 - * Epididymis
 - * Kidney
 - * Liver
 - * Lymph Node, Mandibular
 - * Stomach, Forestomach
 - * Testes
 - * Thymus
- | | | | |
|--|----------------|---------------------------|-----------------------|
| | Duct | Hypocellularity | Marked |
| | | Exfoliated Germ Cell | Marked |
| | | Hypospermia | Moderate |
| | | Nephropathy | Chronicprogr, Minimal |
| | Hepatocyte | Cytoplasmic Alteration | Marked |
| | Hepatocyte | Hypertrophy | Marked |
| | Hepatocyte | Necrosis | Minimal |
| | Hepatocyte | Vacuolization Cytoplasmic | Mild |
| | | Atrophy | Mild |
| | Epithelium | Hyperplasia | Mild |
| | | Inflammation | Chronic Active, Mild |
| | | Ulcer | Minimal |
| | Interstit Cell | Atrophy | Mild |
| | Germinal Epith | Degeneration | Marked |
| | Seminif Tub | Spermatid Retention | Moderate |
| | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

* PROTOCOL REQUIRED TISSUE

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 741

TRT#: 9

SEX: Male

DAY ON TEST: 24

DOSE: 5 mg/kg/d M

DISP: Natural Death

HISTO: 1204945

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|--------------------------|---------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Esophagus | * Eye | * Harderian Gland |
| * Heart | * Intestine Large, Cecum | * Intestine Large, Rectum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Kidney | * Lung | * Mammary Gland |
| * Nose | * Parathyroid Gland | * Pituitary Gland | * Preputial Gland |
| * Prostate | * Salivary Glands | * Seminal Vesicle | * Skin |
| * Stomach, Glandular | * Thyroid Gland | * Trachea | * Urinary Bladder |

MISSING

- | | | | |
|--------------|--------------------------|-----------------------------|--------------------------|
| * Epididymis | * Intestine Large, Colon | * Intestine Small, Duodenum | * Lymph Node, Mesenteric |
| * Pancreas | * Spleen | * Stomach, Forestomach | * Testes |

OBSERVATIONS

- | | | | |
|--------------------------|------------|------------------------|--------|
| * Bone Marrow | | Hypocellularity | Marked |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Mild |
| | Hepatocyte | Hypertrophy | Marked |
| * Lymph Node, Mandibular | | Atrophy | Marked |
| * Thymus | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 742

TRT#: 9

SEX: Male

DAY ON TEST: 25

DOSE: 5 mg/kg/d M

DISP: Natural Death

HISTO: 1204946

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- * Adrenal Cortex
- * Brain
- * Heart
- * Intestine Small, Duodenum
- * Lung
- * Parathyroid Gland
- * Seminal Vesicle
- * Trachea
- * Adrenal Medulla
- * Esophagus
- * Intestine Large, Cecum
- * Intestine Small, Ileum
- * Mammary Gland
- * Pituitary Gland
- * Skin
- * Urinary Bladder
- * Blood Vessel
- * Eye
- * Intestine Large, Colon
- * Intestine Small, Jejunum
- * Nose
- * Preputial Gland
- * Stomach, Glandular
- * Bone
- * Harderian Gland
- * Intestine Large, Rectum
- * Kidney
- * Pancreas
- * Prostate
- * Thyroid Gland

MISSING

- * Lymph Node, Mandibular
- * Salivary Glands

OBSERVATIONS

- * Bone Marrow
 - * Epididymis
 - * Liver
 - * Lymph Node, Mesenteric
 - * Spleen
 - * Stomach, Forestomach
 - * Testes
 - * Thymus
- | | | | |
|--|----------------|------------------------|----------|
| | Epithelium | Hypocellularity | Marked |
| | Duct | Apoptosis | Mild |
| | | Exfoliated Germ Cell | Moderate |
| | | Hypospermia | Moderate |
| | Hepatocyte | Cytoplasmic Alteration | Marked |
| | Hepatocyte | Hypertrophy | Marked |
| | | Atrophy | Marked |
| | | Atrophy | Marked |
| | Epithelium | Hyperplasia | Minimal |
| | Interstit Cell | Atrophy | Moderate |
| | Germinal Epith | Degeneration | Moderate |
| | Seminif Tub | Spermatid Retention | Moderate |
| | | Atrophy | Marked |

[Atrophy TGLs = 2 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 743

TRT#: 9

SEX: Male

DAY ON TEST: 24

DOSE: 5 mg/kg/d M

DISP: Natural Death

HISTO: 1204947

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Esophagus | * Eye | * Harderian Gland |
| * Heart | * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Kidney |
| * Mammary Gland | * Nose | * Pancreas | * Parathyroid Gland |
| * Pituitary Gland | * Preputial Gland | * Prostate | * Salivary Glands |
| * Seminal Vesicle | * Skin | * Stomach, Glandular | * Thyroid Gland |
| * Trachea | * Urinary Bladder | | |

MISSING

- * Lymph Node, Mandibular

OBSERVATIONS

- | | | | |
|--------------------------|----------------|------------------------|-------------|
| * Bone Marrow | | Hypocellularity | Marked |
| * Epididymis | Epithelium | Apoptosis | Mild |
| | Duct | Exfoliated Germ Cell | Moderate |
| | | Hypospermia | Moderate |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Minimal |
| | Hepatocyte | Hypertrophy | Mild |
| | Hepatocyte | Necrosis | Mild |
| * Lung | Artery | Thrombus | Focal, Mild |
| * Lymph Node, Mesenteric | | Atrophy | Marked |
| * Spleen | | Atrophy | Marked |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Mild |
| * Testes | Interstit Cell | Atrophy | Moderate |
| | Germinal Epith | Degeneration | Mild |
| | Seminif Tub | Spermatid Retention | Moderate |
| * Thymus | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

* PROTOCOL REQUIRED TISSUE

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 744

TRT#: 9

SEX: Male

DAY ON TEST: 29

DOSE: 5 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204948

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- * Adrenal Cortex
- * Brain
- * Heart
- * Intestine Small, Duodenum
- * Lung
- * Nose
- * Preputial Gland
- * Skin
- * Thyroid Gland
- * Adrenal Medulla
- * Esophagus
- * Intestine Large, Cecum
- * Intestine Small, Ileum
- * Lymph Node, Mandibular
- * Pancreas
- * Prostate
- * Spleen
- * Trachea
- * Blood Vessel
- * Eye
- * Intestine Large, Colon
- * Intestine Small, Jejunum
- * Lymph Node, Mesenteric
- * Parathyroid Gland
- * Salivary Glands
- * Stomach, Forestomach
- * Urinary Bladder
- * Bone
- * Harderian Gland
- * Intestine Large, Rectum
- * Kidney
- * Mammary Gland
- * Pituitary Gland
- * Seminal Vesicle
- * Stomach, Glandular

OBSERVATIONS

- * Bone Marrow
 - * Epididymis
 - * Liver
 - * Testes
 - * Thymus
 - Epithelium
 - Duct
 - Hepatocyte
 - Hepatocyte
 - Hepatocyte
 - Interstit Cell
 - Germinal Epith
 - Seminif Tub
 - Hypocellularity
 - Apoptosis
 - Exfoliated Germ Cell
 - Hypospermia
 - Cytoplasmic Alteration
 - Hypertrophy
 - Necrosis
 - Atrophy
 - Degeneration
 - Spermatid Retention
 - Atrophy
 - Marked
 - Mild
 - Marked
 - Marked
 - Marked
 - Mild
 - Moderate
 - Moderate
 - Moderate
 - Marked
- [Hypertrophy TGLs = 2 - 17]
 [Necrosis TGLs = 1 - 12]
 [Atrophy TGLs = 3 - 6]

* PROTOCOL REQUIRED TISSUE

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 745

TRT#: 9

SEX: Male

DAY ON TEST: 24

DOSE: 5 mg/kg/d M

DISP: Natural Death

HISTO: 1204949

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Esophagus | * Eye | * Harderian Gland |
| * Heart | * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Kidney |
| * Lung | * Mammary Gland | * Nose | * Pancreas |
| * Parathyroid Gland | * Pituitary Gland | * Preputial Gland | * Prostate |
| * Salivary Glands | * Seminal Vesicle | * Skin | * Stomach, Forestomach |
| * Stomach, Glandular | * Thyroid Gland | * Trachea | * Urinary Bladder |

OBSERVATIONS

- | | | | |
|--------------------------|----------------|------------------------|----------|
| * Bone Marrow | | Hypocellularity | Marked |
| * Epididymis | Epithelium | Apoptosis | Moderate |
| | Duct | Exfoliated Germ Cell | Marked |
| | | Hypospermia | Marked |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Moderate |
| | Hepatocyte | Hypertrophy | Moderate |
| | Hepatocyte | Necrosis | Mild |
| * Lymph Node, Mandibular | | Atrophy | Moderate |
| * Lymph Node, Mesenteric | | Atrophy | Moderate |
| * Spleen | | Atrophy | Marked |
| * Testes | Interstit Cell | Atrophy | Moderate |
| | Germinal Epith | Degeneration | Moderate |
| | Seminif Tub | Spermatid Retention | Moderate |
| * Thymus | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 746

TRT#: 9

SEX: Male

DAY ON TEST: 25

DOSE: 5 mg/kg/d M

DISP: Natural Death

HISTO: 1204950

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- * Adrenal Cortex
- * Brain
- * Heart
- * Intestine Small, Duodenum
- * Mammary Gland
- * Pituitary Gland
- * Seminal Vesicle
- * Trachea
- * Adrenal Medulla
- * Esophagus
- * Intestine Large, Cecum
- * Intestine Small, Ileum
- * Nose
- * Preputial Gland
- * Skin
- * Urinary Bladder
- * Blood Vessel
- * Eye
- * Intestine Large, Colon
- * Intestine Small, Jejunum
- * Pancreas
- * Prostate
- * Stomach, Glandular
- * Bone
- * Harderian Gland
- * Intestine Large, Rectum
- * Lung
- * Parathyroid Gland
- * Salivary Glands
- * Thyroid Gland

OBSERVATIONS

- * Bone Marrow
 - * Epididymis
 - * Kidney
 - * Liver
 - * Lymph Node, Mandibular
 - * Lymph Node, Mesenteric
 - * Spleen
 - * Stomach, Forestomach
 - * Testes
 - * Thymus
- | | | | |
|--|----------------|------------------------|-----------------------|
| | Epithelium | Hypocellularity | Marked |
| | Epithelium | Apoptosis | Mild |
| | Duct | Exfoliated Germ Cell | Mild |
| | | Exfoliated Germ Cell | Marked |
| | | Hypospermia | Marked |
| | | Nephropathy | Chronicprogr, Minimal |
| | Hepatocyte | Cytoplasmic Alteration | Mild |
| | Hepatocyte | Hypertrophy | Moderate |
| | Hepatocyte | Necrosis | Mild |
| | | Atrophy | Marked |
| | | Atrophy | Marked |
| | | Atrophy | Marked |
| | Epithelium | Hyperplasia | Minimal |
| | Interstit Cell | Atrophy | Moderate |
| | Germinal Epith | Degeneration | Moderate |
| | Seminif Tub | Spermatid Retention | Moderate |
| | | Atrophy | Marked |

[Atrophy TGLs = 2 - 6]

* PROTOCOL REQUIRED TISSUE

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 747

TRT#: 9

SEX: Male

DAY ON TEST: 29

DOSE: 5 mg/kg/d M

DISP: Terminal Sacrifice

HISTO: 1204951

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Esophagus | * Eye | * Harderian Gland |
| * Heart | * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Lung |
| * Lymph Node, Mandibular | * Lymph Node, Mesenteric | * Mammary Gland | * Nose |
| * Pancreas | * Pituitary Gland | * Preputial Gland | * Prostate |
| * Salivary Glands | * Seminal Vesicle | * Skin | * Stomach, Glandular |
| * Thyroid Gland | * Trachea | * Urinary Bladder | |

MISSING

- * Parathyroid Gland

OBSERVATIONS

- | | | | |
|------------------------|-------------------|------------------------|-----------------------|
| * Bone Marrow | | Hypocellularity | Marked |
| * Epididymis | Duct | Exfoliated Germ Cell | Moderate |
| | | Hypospermia | Moderate |
| * Kidney | | Nephropathy | Chronicprogr, Minimal |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Marked |
| | Hepatocyte | Hypertrophy | Marked |
| | | Infiltration Cellular | Mixed Cell, Minimal |
| * Spleen | | Atrophy | Minimal |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Mild |
| * Testes | Interstitial Cell | Atrophy | Moderate |
| | Germinal Epith | Degeneration | Moderate |
| | Seminif Tub | Spermatid Retention | Moderate |
| * Thymus | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 748

TRT#: 9

SEX: Male

DAY ON TEST: 25

DOSE: 5 mg/kg/d M

DISP: Natural Death

HISTO: 1204952

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|------------------|---------------------------|-------------------|-------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Esophagus | * Eye | * Harderian Gland |
| * Heart | * Intestine Large, Rectum | * Kidney | * Lung |
| * Mammary Gland | * Parathyroid Gland | * Pituitary Gland | * Preputial Gland |
| * Prostate | * Salivary Glands | * Seminal Vesicle | * Skin |
| * Thyroid Gland | * Trachea | * Urinary Bladder | |

MISSING

- | | | | |
|----------------------------|--------------------------|-----------------------------|--------------------------|
| * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Liver | * Lymph Node, Mesenteric | * Pancreas |
| * Spleen | * Stomach, Forestomach | * Stomach, Glandular | |

OBSERVATIONS

- | | | | |
|---|----------------|----------------------|-------------------|
| * Bone Marrow | | Hypocellularity | Marked |
| * Epididymis | Epithelium | Apoptosis | Mild |
| | Duct | Exfoliated Germ Cell | Marked |
| | | Hypospermia | Marked |
| * Lung | | | |
| Note: TGL-1=No apparent microscopic lesion. | | | |
| * Lymph Node, Mandibular | | Atrophy | Marked |
| * Nose | Olfactory Epi | Degeneration | Minimal |
| | Olfactory Epi | Inflammation | Suppurative, Mild |
| * Testes | Interstit Cell | Atrophy | Marked |
| | Germinal Epith | Degeneration | Marked |
| | Seminif Tub | Spermatid Retention | Moderate |
| * Thymus | | Atrophy | Marked |

[Atrophy TGLs = 3 - 6]

* PROTOCOL REQUIRED TISSUE

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 749

TRT#: 9

SEX: Male

DAY ON TEST: 26

DOSE: 5 mg/kg/d M

DISP: Natural Death

HISTO: 1204953

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- * Adrenal Cortex
- * Brain
- * Heart
- * Intestine Small, Duodenum
- * Mammary Gland
- * Pituitary Gland
- * Seminal Vesicle
- * Trachea
- * Adrenal Medulla
- * Esophagus
- * Intestine Large, Cecum
- * Intestine Small, Ileum
- * Nose
- * Preputial Gland
- * Skin
- * Urinary Bladder
- * Blood Vessel
- * Eye
- * Intestine Large, Colon
- * Intestine Small, Jejunum
- * Pancreas
- * Prostate
- * Stomach, Glandular
- * Bone
- * Harderian Gland
- * Intestine Large, Rectum
- * Lung
- * Parathyroid Gland
- * Salivary Glands
- * Thyroid Gland

OBSERVATIONS

- * Bone Marrow
 - * Epididymis
 - * Kidney
 - * Liver
 - [Necrosis TGLs = 1 - 17]
 - * Lymph Node, Mandibular
 - * Lymph Node, Mesenteric
 - * Spleen
 - * Stomach, Forestomach
 - * Testes
 - * Thymus
 - [Atrophy TGLs = 2 - 6]
- | | | | |
|--|----------------|------------------------|-----------------------|
| | | Hypocellularity | Marked |
| | Epithelium | Apoptosis | Minimal |
| | Duct | Exfoliated Germ Cell | Marked |
| | | Hypospermia | Marked |
| | | Nephropathy | Chronicprogr, Minimal |
| | Hepatocyte | Cytoplasmic Alteration | Marked |
| | Hepatocyte | Hypertrophy | Marked |
| | Hepatocyte | Necrosis | Mild |
| | | Atrophy | Marked |
| | | Atrophy | Moderate |
| | | Atrophy | Marked |
| | Epithelium | Hyperplasia | Mild |
| | Interstit Cell | Atrophy | Moderate |
| | Germinal Epith | Degeneration | Moderate |
| | Seminif Tub | Spermatid Retention | Moderate |
| | | Atrophy | Marked |

* PROTOCOL REQUIRED TISSUE

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 750

TRT#: 9

SEX: Male

DAY ON TEST: 24

DOSE: 5 mg/kg/d M

DISP: Natural Death

HISTO: 1204954

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- * Adrenal Cortex
- * Adrenal Medulla
- * Blood Vessel
- * Bone
- * Brain
- * Esophagus
- * Eye
- * Harderian Gland
- * Heart
- * Intestine Large, Cecum
- * Intestine Large, Colon
- * Intestine Large, Rectum
- * Intestine Small, Duodenum
- * Intestine Small, Ileum
- * Intestine Small, Jejunum
- * Lung
- * Mammary Gland
- * Nose
- * Pancreas
- * Parathyroid Gland
- * Pituitary Gland
- * Preputial Gland
- * Prostate
- * Salivary Glands
- * Seminal Vesicle
- * Skin
- * Stomach, Glandular
- * Thyroid Gland
- * Trachea
- * Urinary Bladder

MISSING

- * Lymph Node, Mandibular

OBSERVATIONS

- | | | | |
|--------------------------|----------------|------------------------|-----------------------|
| * Bone Marrow | | Hypocellularity | Marked |
| * Epididymis | Epithelium | Apoptosis | Mild |
| | Duct | Exfoliated Germ Cell | Marked |
| | | Hypospermia | Marked |
| * Kidney | | Nephropathy | Chronicprogr, Minimal |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Marked |
| | Hepatocyte | Hypertrophy | Marked |
| | Hepatocyte | Necrosis | Mild |
| * Lymph Node, Mesenteric | | Atrophy | Marked |
| * Spleen | | Atrophy | Marked |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Moderate |
| * Testes | Interstit Cell | Atrophy | Moderate |
| | Germinal Epith | Degeneration | Marked |
| | Seminif Tub | Spermatid Retention | Moderate |
| * Thymus | | Atrophy | Marked |

[Atrophy TGLs = 2 - 6]

* PROTOCOL REQUIRED TISSUE

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 751

TRT#: 11

SEX: Male

DAY ON TEST: 15

DOSE: 10 mg/kg/d M

DISP: Natural Death

HISTO: 1204955

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Esophagus | * Eye | * Harderian Gland |
| * Heart | * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Kidney |
| * Lung | * Lymph Node, Mandibular | * Mammary Gland | * Nose |
| * Pancreas | * Parathyroid Gland | * Pituitary Gland | * Preputial Gland |
| * Prostate | * Salivary Glands | * Seminal Vesicle | * Skin |
| * Stomach, Glandular | * Thyroid Gland | * Trachea | * Urinary Bladder |

OBSERVATIONS

- | | | | |
|--------------------------|-------------------|------------------------|----------|
| * Bone Marrow | | Hypocellularity | Moderate |
| * Epididymis | Epithelium | Apoptosis | Moderate |
| | Duct | Exfoliated Germ Cell | Moderate |
| | | Granuloma Sperm | Mild |
| | | Hypospermia | Moderate |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Moderate |
| | Hepatocyte | Hypertrophy | Moderate |
| * Lymph Node, Mesenteric | | Atrophy | Moderate |
| * Spleen | | Atrophy | Marked |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Mild |
| * Testes | Interstitial Cell | Atrophy | Moderate |
| | Germinal Epith | Degeneration | Marked |
| | Seminif Tub | Spermatid Retention | Moderate |
| * Thymus | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 752

TRT#: 11

SEX: Male

DAY ON TEST: 17

DOSE: 10 mg/kg/d M

DISP: Natural Death

HISTO: 1204956

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- * Adrenal Cortex
- * Adrenal Medulla
- * Blood Vessel
- * Bone
- * Brain
- * Esophagus
- * Eye
- * Harderian Gland
- * Heart
- * Intestine Large, Cecum
- * Intestine Large, Colon
- * Intestine Large, Rectum
- * Intestine Small, Duodenum
- * Intestine Small, Ileum
- * Intestine Small, Jejunum
- * Kidney
- * Mammary Gland
- * Pancreas
- * Parathyroid Gland
- * Pituitary Gland
- * Preputial Gland
- * Prostate
- * Salivary Glands
- * Seminal Vesicle
- * Skin
- * Stomach, Forestomach
- * Stomach, Glandular
- * Thyroid Gland
- * Trachea
- * Urinary Bladder

MISSING

- * Thymus

OBSERVATIONS

- | | | | |
|--------------------------|-------------------|------------------------|---------------------|
| * Bone Marrow | | Hypocellularity | Moderate |
| * Epididymis | Epithelium | Apoptosis | Moderate |
| | Duct | Exfoliated Germ Cell | Mild |
| | | Granuloma Sperm | Mild |
| | | Hypospermia | Moderate |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Mild |
| | Hepatocyte | Hypertrophy | Moderate |
| | Hepatocyte | Necrosis | Minimal |
| * Lung | | Infiltration Cellular | Mixed Cell, Minimal |
| * Lymph Node, Mandibular | | Atrophy | Mild |
| * Lymph Node, Mesenteric | | Atrophy | Marked |
| * Nose | Olfactory Epi | Degeneration | Minimal |
| | Olfactory Epi | Inflammation | Suppurative, Mild |
| * Spleen | | Atrophy | Marked |
| * Testes | Interstitial Cell | Atrophy | Moderate |
| | Germinal Epith | Degeneration | Marked |
| | Seminif Tub | Spermatid Retention | Moderate |

* PROTOCOL REQUIRED TISSUE

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 755

TRT#: 11

SEX: Male

DAY ON TEST: 17

DOSE: 10 mg/kg/d M

DISP: Natural Death

HISTO: 1204959

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Esophagus | * Eye | * Harderian Gland |
| * Heart | * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Kidney |
| * Lung | * Lymph Node, Mandibular | * Mammary Gland | * Nose |
| * Pancreas | * Pituitary Gland | * Preputial Gland | * Prostate |
| * Salivary Glands | * Seminal Vesicle | * Skin | * Spleen |
| * Stomach, Glandular | * Thyroid Gland | * Trachea | * Urinary Bladder |

MISSING

- * Parathyroid Gland

OBSERVATIONS

- | | | | |
|--------------------------|----------------|------------------------|----------|
| * Bone Marrow | | Hypocellularity | Moderate |
| * Epididymis | Epithelium | Apoptosis | Minimal |
| | Duct | Exfoliated Germ Cell | Marked |
| | | Granuloma Sperm | Mild |
| | | Hypospermia | Moderate |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Mild |
| | Hepatocyte | Hypertrophy | Moderate |
| | Hepatocyte | Necrosis | Mild |
| * Lymph Node, Mesenteric | | Atrophy | Marked |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Mild |
| * Testes | Interstit Cell | Atrophy | Marked |
| | Germinal Epith | Degeneration | Marked |
| | Seminif Tub | Spermatid Retention | Moderate |
| * Thymus | | Atrophy | Marked |

* PROTOCOL REQUIRED TISSUE

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 757

TRT#: 11

SEX: Male

DAY ON TEST: 17

DOSE: 10 mg/kg/d M

DISP: Natural Death

HISTO: 1204961

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- * Adrenal Cortex
- * Brain
- * Heart
- * Intestine Small, Duodenum
- * Lung
- * Pituitary Gland
- * Seminal Vesicle
- * Trachea
- * Adrenal Medulla
- * Esophagus
- * Intestine Large, Cecum
- * Intestine Small, Ileum
- * Mammary Gland
- * Preputial Gland
- * Skin
- * Urinary Bladder
- * Blood Vessel
- * Eye
- * Intestine Large, Colon
- * Intestine Small, Jejunum
- * Pancreas
- * Prostate
- * Stomach, Glandular
- * Bone
- * Harderian Gland
- * Intestine Large, Rectum
- * Kidney
- * Parathyroid Gland
- * Salivary Glands
- * Thyroid Gland

OBSERVATIONS

- * Bone Marrow
 - * Epididymis
 - * Liver
 - * Lymph Node, Mandibular
 - * Lymph Node, Mesenteric
 - * Nose
 - * Spleen
 - * Stomach, Forestomach
 - * Testes
 - * Thymus
- | | | | |
|--|----------------|------------------------|-------------------|
| | Epithelium | Hypocellularity | Moderate |
| | Duct | Apoptosis | Mild |
| | | Exfoliated Germ Cell | Marked |
| | | Hypospermia | Moderate |
| | Hepatocyte | Cytoplasmic Alteration | Mild |
| | Hepatocyte | Hypertrophy | Moderate |
| | Hepatocyte | Necrosis | Mild |
| | | Atrophy | Mild |
| | | Atrophy | Mild |
| | Olfactory Epi | Degeneration | Mild |
| | Respirat Epith | Hyperplasia | Minimal |
| | Olfactory Epi | Inflammation | Suppurative, Mild |
| | | Atrophy | Marked |
| | Epithelium | Hyperplasia | Mild |
| | Interstit Cell | Atrophy | Moderate |
| | Germinal Epith | Degeneration | Moderate |
| | Seminif Tub | Spermatid Retention | Moderate |
| | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

* PROTOCOL REQUIRED TISSUE

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 758

TRT#: 11

SEX: Male

DAY ON TEST: 17

DOSE: 10 mg/kg/d M

DISP: Natural Death

HISTO: 1204962

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- * Adrenal Cortex
- * Brain
- * Heart
- * Intestine Small, Duodenum
- * Lung
- * Pituitary Gland
- * Seminal Vesicle
- * Trachea
- * Adrenal Medulla
- * Esophagus
- * Intestine Large, Cecum
- * Intestine Small, Ileum
- * Mammary Gland
- * Preputial Gland
- * Skin
- * Urinary Bladder
- * Blood Vessel
- * Eye
- * Intestine Large, Colon
- * Intestine Small, Jejunum
- * Pancreas
- * Prostate
- * Stomach, Glandular
- * Bone
- * Harderian Gland
- * Intestine Large, Rectum
- * Kidney
- * Parathyroid Gland
- * Salivary Glands
- * Thyroid Gland

OBSERVATIONS

- * Bone Marrow
 - * Epididymis
 - * Liver
 - * Lymph Node, Mandibular
 - * Lymph Node, Mesenteric
 - * Nose
 - * Spleen
 - * Stomach, Forestomach
 - * Testes
 - * Thymus
- | | | | |
|--|----------------|------------------------|----------|
| | Epithelium | Hypocellularity | Moderate |
| | Duct | Apoptosis | Moderate |
| | | Exfoliated Germ Cell | Marked |
| | | Hypospermia | Moderate |
| | Hepatocyte | Cytoplasmic Alteration | Moderate |
| | Hepatocyte | Hypertrophy | Moderate |
| | Hepatocyte | Necrosis | Mild |
| | | Atrophy | Mild |
| | | Atrophy | Marked |
| | Olfactory Epi | Degeneration | Minimal |
| | | Atrophy | Marked |
| | Epithelium | Hyperplasia | Minimal |
| | Interstit Cell | Atrophy | Marked |
| | Germinal Epith | Degeneration | Marked |
| | Seminif Tub | Spermatid Retention | Moderate |
| | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 759

TRT#: 11

SEX: Male

DAY ON TEST: 18

DOSE: 10 mg/kg/d M

DISP: Natural Death

HISTO: 1204963

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Esophagus | * Eye | * Harderian Gland |
| * Heart | * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Kidney |
| * Lung | * Mammary Gland | * Nose | * Pancreas |
| * Parathyroid Gland | * Pituitary Gland | * Preputial Gland | * Prostate |
| * Salivary Glands | * Seminal Vesicle | * Skin | * Stomach, Glandular |
| * Thyroid Gland | * Trachea | * Urinary Bladder | |

OBSERVATIONS

- | | | | |
|--------------------------|----------------|------------------------|----------|
| * Bone Marrow | | Hypocellularity | Moderate |
| * Epididymis | Epithelium | Apoptosis | Mild |
| | Duct | Exfoliated Germ Cell | Marked |
| | | Hypospermia | Moderate |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Mild |
| | Hepatocyte | Hypertrophy | Moderate |
| | Hepatocyte | Necrosis | Minimal |
| * Lymph Node, Mandibular | | Atrophy | Mild |
| * Lymph Node, Mesenteric | | Atrophy | Moderate |
| * Spleen | | Atrophy | Marked |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Mild |
| * Testes | Interstit Cell | Atrophy | Moderate |
| | Germinal Epith | Degeneration | Moderate |
| | Seminif Tub | Spermatid Retention | Moderate |
| * Thymus | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 760

TRT#: 11

SEX: Male

DAY ON TEST: 16

DOSE: 10 mg/kg/d M

DISP: Natural Death

HISTO: 1204964

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Esophagus | * Eye | * Harderian Gland |
| * Heart | * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Kidney |
| * Lung | * Mammary Gland | * Nose | * Pancreas |
| * Parathyroid Gland | * Pituitary Gland | * Preputial Gland | * Prostate |
| * Salivary Glands | * Seminal Vesicle | * Skin | * Stomach, Glandular |
| * Thyroid Gland | * Trachea | * Urinary Bladder | |

MISSING

- * Thymus

OBSERVATIONS

- | | | | |
|--------------------------|----------------|------------------------|----------|
| * Bone Marrow | | Hypocellularity | Marked |
| * Epididymis | Epithelium | Apoptosis | Mild |
| | Duct | Exfoliated Germ Cell | Marked |
| | | Granuloma Sperm | Mild |
| | | Hypospermia | Moderate |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Minimal |
| | Hepatocyte | Hypertrophy | Moderate |
| | Hepatocyte | Necrosis | Mild |
| * Lymph Node, Mandibular | | Atrophy | Moderate |
| * Lymph Node, Mesenteric | | Atrophy | Mild |
| * Spleen | | Atrophy | Marked |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Mild |
| * Testes | Interstit Cell | Atrophy | Marked |
| | Germinal Epith | Degeneration | Marked |
| | Seminif Tub | Spermatid Retention | Moderate |

* PROTOCOL REQUIRED TISSUE

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 761

TRT#: 2

SEX: Female

DAY ON TEST: 29

DOSE: 0 mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204965

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Kidney	* Liver	* Lung
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 762

TRT#: 2

SEX: Female

DAY ON TEST: 29

DOSE: 0 mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204966

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Kidney | * Liver | * Lung |
| * Lymph Node, Mandibular | * Lymph Node, Mesenteric | * Mammary Gland | * Nose |
| * Ovary | * Pancreas | * Pituitary Gland | * Salivary Glands |
| * Skin | * Spleen | * Stomach, Forestomach | * Stomach, Glandular |
| * Thymus | * Thyroid Gland | * Trachea | * Urinary Bladder |
| * Uterus | | | |

MISSING

- * Parathyroid Gland

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 763

TRT#: 2

SEX: Female

DAY ON TEST: 29

DOSE: 0 mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204967

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Lung | * Lymph Node, Mandibular | * Lymph Node, Mesenteric |
| * Mammary Gland | * Nose | * Ovary | * Pancreas |
| * Parathyroid Gland | * Pituitary Gland | * Salivary Glands | * Skin |
| * Spleen | * Stomach, Forestomach | * Stomach, Glandular | * Thymus |
| * Thyroid Gland | * Trachea | * Urinary Bladder | * Uterus |

OBSERVATIONS

- | | | | |
|-------------------------------|--|-----------------------|-----------------------|
| * Eye | | | |
| Note: Optic nerve is missing. | | | |
| * Kidney | | Nephropathy | Chronicprogr, Minimal |
| * Liver | | Infiltration Cellular | Mixed Cell, Minimal |

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 764

TRT#: 2

SEX: Female

DAY ON TEST: 29

DOSE: 0 mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204968

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Liver | * Lung | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric | * Mammary Gland | * Nose | * Ovary |
| * Pancreas | * Parathyroid Gland | * Pituitary Gland | * Salivary Glands |
| * Skin | * Spleen | * Stomach, Forestomach | * Stomach, Glandular |
| * Thymus | * Thyroid Gland | * Trachea | * Urinary Bladder |
| * Uterus | | | |

OBSERVATIONS

- | | | |
|----------|-------------|-----------------------|
| * Kidney | Nephropathy | Chronicprogr, Minimal |
|----------|-------------|-----------------------|

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 765

TRT#: 2

SEX: Female

DAY ON TEST: 29

DOSE: 0 mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204969

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Liver | * Lung | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric | * Mammary Gland | * Nose | * Ovary |
| * Pancreas | * Parathyroid Gland | * Pituitary Gland | * Salivary Glands |
| * Skin | * Spleen | * Stomach, Forestomach | * Stomach, Glandular |
| * Thymus | * Thyroid Gland | * Trachea | * Urinary Bladder |
| * Uterus | | | |

OBSERVATIONS

- | | | |
|----------|-------------|-----------------------|
| * Kidney | Nephropathy | Chronicprogr, Minimal |
|----------|-------------|-----------------------|

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 766

TRT#: 2

SEX: Female

DAY ON TEST: 29

DOSE: 0 mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204970

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Liver | * Lung | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric | * Mammary Gland | * Nose | * Ovary |
| * Pancreas | * Pituitary Gland | * Salivary Glands | * Skin |
| * Spleen | * Stomach, Forestomach | * Stomach, Glandular | * Thymus |
| * Thyroid Gland | * Trachea | * Urinary Bladder | |

MISSING

- * Parathyroid Gland

OBSERVATIONS

- | | | | |
|----------|-----------|-------------|-----------------------|
| * Kidney | | Nephropathy | Chronicprogr, Minimal |
| * Uterus | Bilateral | Dilation | Moderate |

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 767

TRT#: 2

SEX: Female

DAY ON TEST: 29

DOSE: 0 mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204971

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Liver | * Lung | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric | * Mammary Gland | * Nose | * Ovary |
| * Pancreas | * Pituitary Gland | * Salivary Glands | * Skin |
| * Spleen | * Stomach, Forestomach | * Stomach, Glandular | * Thymus |
| * Thyroid Gland | * Trachea | * Urinary Bladder | * Uterus |

MISSING

- * Parathyroid Gland

OBSERVATIONS

- | | | |
|----------|-------------|-----------------------|
| * Kidney | Nephropathy | Chronicprogr, Minimal |
|----------|-------------|-----------------------|

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 768

TRT#: 2

SEX: Female

DAY ON TEST: 29

DOSE: 0 mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204972

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Kidney	Nephropathy	Chronicprogr, Minimal
* Lung	Infiltration Cellular	Mixed Cell, Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 769

TRT#: 2

SEX: Female

DAY ON TEST: 29

DOSE: 0 mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204973

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Kidney	* Liver	* Lung
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 770

TRT#: 2

SEX: Female

DAY ON TEST: 29

DOSE: 0 mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204974

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Kidney | * Lung | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric | * Mammary Gland | * Nose | * Ovary |
| * Pancreas | * Parathyroid Gland | * Pituitary Gland | * Salivary Glands |
| * Skin | * Spleen | * Stomach, Forestomach | * Stomach, Glandular |
| * Thymus | * Thyroid Gland | * Trachea | * Urinary Bladder |
| * Uterus | | | |

OBSERVATIONS

- | | | |
|---------|-----------------------|---------------------|
| * Liver | Clear Cell Focus | Mixed Cell, Minimal |
| | Infiltration Cellular | |

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 771

TRT#: 4

SEX: Female

DAY ON TEST: 29

DOSE: 1.56mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204975

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow

* Kidney

* Liver

Lymph Node, Mandibular

Lymph Node, Mesenteric

Nose

* Ovary

* Pancreas

Spleen

Stomach, Forestomach

Thymus

* Thyroid Gland

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 772

TRT#: 4

SEX: Female

DAY ON TEST: 29

DOSE: 1.56mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204976

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow

* Kidney

Lymph Node, Mandibular

Lymph Node, Mesenteric

Nose

* Ovary

* Pancreas

Spleen

Stomach, Forestomach

Thymus

* Thyroid Gland

OBSERVATIONS

* Liver

Hepatocyte

Cytoplasmic Alteration

Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 773

TRT#: 4

SEX: Female

DAY ON TEST: 29

DOSE: 1.56mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204977

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow

* Kidney

* Liver

Lymph Node, Mandibular

Lymph Node, Mesenteric

Nose

* Ovary

* Pancreas

Spleen

Stomach, Forestomach

Thymus

* Thyroid Gland

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 774

TRT#: 4

SEX: Female

DAY ON TEST: 29

DOSE: 1.56mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204978

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow

* Kidney

Lymph Node, Mandibular

Lymph Node, Mesenteric

Nose

* Ovary

* Pancreas

Spleen

Stomach, Forestomach

Thymus

* Thyroid Gland

OBSERVATIONS

* Liver

Hepatocyte

Cytoplasmic Alteration

Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 775

TRT#: 4

SEX: Female

DAY ON TEST: 29

DOSE: 1.56mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204979

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow

* Liver

Lymph Node, Mandibular

Lymph Node, Mesenteric

Nose

* Ovary

* Pancreas

Spleen

Stomach, Forestomach

Thymus

* Thyroid Gland

OBSERVATIONS

* Kidney

Nephropathy

Chronicprogr, Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 776

TRT#: 4

SEX: Female

DAY ON TEST: 29

DOSE: 1.56mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204980

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow

* Kidney

* Liver

Lymph Node, Mandibular

Lymph Node, Mesenteric

Nose

* Ovary

* Pancreas

Spleen

Stomach, Forestomach

Thymus

* Thyroid Gland

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 777

TRT#: 4

SEX: Female

DAY ON TEST: 29

DOSE: 1.56mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204981

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow

* Kidney

* Liver

Lymph Node, Mandibular

Lymph Node, Mesenteric

Nose

* Ovary

* Pancreas

Spleen

Stomach, Forestomach

Thymus

* Thyroid Gland

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 778

TRT#: 4

SEX: Female

DAY ON TEST: 29

DOSE: 1.56mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204982

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow

* Kidney

Lymph Node, Mandibular

Lymph Node, Mesenteric

Nose

* Ovary

* Pancreas

Spleen

Stomach, Forestomach

Thymus

* Thyroid Gland

OBSERVATIONS

* Liver

Hepatocyte

Cytoplasmic Alteration

Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 779

TRT#: 4

SEX: Female

DAY ON TEST: 29

DOSE: 1.56mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204983

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow	Lymph Node, Mandibular	Lymph Node, Mesenteric	Nose
* Ovary	* Pancreas	Spleen	Stomach, Forestomach
Thymus	* Thyroid Gland		

OBSERVATIONS

* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver	Hepatocyte	Cytoplasmic Alteration	Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 780

TRT#: 4

SEX: Female

DAY ON TEST: 29

DOSE: 1.56mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204984

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow	Lymph Node, Mandibular	Lymph Node, Mesenteric	Nose
* Ovary	* Pancreas	Spleen	Stomach, Forestomach
Thymus	* Thyroid Gland		

OBSERVATIONS

* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver	Hepatocyte	Cytoplasmic Alteration	Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 781

TRT#: 6

SEX: Female

DAY ON TEST: 29

DOSE: 3.12mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204985

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow	Lymph Node, Mandibular	Lymph Node, Mesenteric	Nose
* Ovary	* Pancreas	Spleen	Stomach, Forestomach
Thymus	* Thyroid Gland		

OBSERVATIONS

* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver	Hepatocyte	Cytoplasmic Alteration	Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 782

TRT#: 6

SEX: Female

DAY ON TEST: 29

DOSE: 3.12mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204986

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow

* Kidney

Lymph Node, Mandibular

Lymph Node, Mesenteric

Nose

* Ovary

* Pancreas

Spleen

Stomach, Forestomach

Thymus

* Thyroid Gland

OBSERVATIONS

* Liver

Hepatocyte

Cytoplasmic Alteration

Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 783

TRT#: 6

SEX: Female

DAY ON TEST: 29

DOSE: 3.12mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204987

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow	Lymph Node, Mandibular	Lymph Node, Mesenteric	Nose
* Ovary	* Pancreas	Spleen	Stomach, Forestomach
Thymus	* Thyroid Gland		

OBSERVATIONS

* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver	Hepatocyte	Cytoplasmic Alteration	Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 784

TRT#: 6

SEX: Female

DAY ON TEST: 29

DOSE: 3.12mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204988

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow

* Kidney

Lymph Node, Mandibular

Lymph Node, Mesenteric

Nose

* Ovary

* Pancreas

Spleen

Stomach, Forestomach

Thymus

* Thyroid Gland

OBSERVATIONS

* Liver

Hepatocyte

Cytoplasmic Alteration

Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 785

TRT#: 6

SEX: Female

DAY ON TEST: 29

DOSE: 3.12mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204989

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow	Lymph Node, Mandibular	Lymph Node, Mesenteric	Nose
* Ovary	* Pancreas	Spleen	Stomach, Forestomach
Thymus	* Thyroid Gland		

OBSERVATIONS

* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver	Hepatocyte	Cytoplasmic Alteration	Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 786

TRT#: 6

SEX: Female

DAY ON TEST: 29

DOSE: 3.12mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204990

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow	Lymph Node, Mandibular	Lymph Node, Mesenteric	Nose
* Ovary	* Pancreas	Spleen	Stomach, Forestomach
Thymus	* Thyroid Gland		

OBSERVATIONS

* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver	Hepatocyte	Cytoplasmic Alteration	Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 787

TRT#: 6

SEX: Female

DAY ON TEST: 29

DOSE: 3.12mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204991

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow

* Kidney

Lymph Node, Mandibular

Lymph Node, Mesenteric

Nose

* Ovary

* Pancreas

Spleen

Stomach, Forestomach

Thymus

* Thyroid Gland

OBSERVATIONS

* Liver

Hepatocyte

Cytoplasmic Alteration

Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 788

TRT#: 6

SEX: Female

DAY ON TEST: 29

DOSE: 3.12mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204992

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow	Lymph Node, Mandibular	Lymph Node, Mesenteric	Nose
* Ovary	* Pancreas	Spleen	Stomach, Forestomach
Thymus	* Thyroid Gland		

OBSERVATIONS

* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver	Hepatocyte	Cytoplasmic Alteration	Minimal
	Hepatocyte	Hypertrophy	Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 789

TRT#: 6

SEX: Female

DAY ON TEST: 29

DOSE: 3.12mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204993

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow

* Kidney

Lymph Node, Mandibular

Lymph Node, Mesenteric

Nose

* Ovary

* Pancreas

Spleen

Stomach, Forestomach

Thymus

* Thyroid Gland

OBSERVATIONS

* Liver

Hepatocyte

Cytoplasmic Alteration

Minimal

Hepatocyte

Hypertrophy

Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 790

TRT#: 6

SEX: Female

DAY ON TEST: 29

DOSE: 3.12mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204994

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow

* Kidney

Lymph Node, Mandibular

Lymph Node, Mesenteric

Nose

* Ovary

* Pancreas

Spleen

Stomach, Forestomach

Thymus

* Thyroid Gland

OBSERVATIONS

* Liver

Hepatocyte

Cytoplasmic Alteration

Minimal

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 791

TRT#: 8

SEX: Female

DAY ON TEST: 29

DOSE: 6.25mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204995

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Kidney | * Lung | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric | * Mammary Gland | * Nose | * Ovary |
| * Pancreas | * Parathyroid Gland | * Salivary Glands | * Skin |
| * Spleen | * Stomach, Forestomach | * Stomach, Glandular | * Thymus |
| * Thyroid Gland | * Trachea | * Urinary Bladder | * Uterus |

MISSING

- * Pituitary Gland

OBSERVATIONS

- | | | | |
|---------|------------|------------------------|--------|
| * Liver | Hepatocyte | Cytoplasmic Alteration | Mild |
| | Hepatocyte | Hypertrophy | Marked |

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 792

TRT#: 8

SEX: Female

DAY ON TEST: 29

DOSE: 6.25mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204996

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Kidney | * Lung | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric | * Mammary Gland | * Nose | * Ovary |
| * Pancreas | * Parathyroid Gland | * Salivary Glands | * Skin |
| * Spleen | * Stomach, Forestomach | * Stomach, Glandular | * Thymus |
| * Thyroid Gland | * Trachea | * Urinary Bladder | * Uterus |

MISSING

- * Pituitary Gland

OBSERVATIONS

- | | | | |
|---------|------------|------------------------|---------------------|
| * Liver | Hepatocyte | Cytoplasmic Alteration | Mild |
| | Hepatocyte | Hypertrophy | Marked |
| | | Infiltration Cellular | Mixed Cell, Minimal |

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 793

TRT#: 8

SEX: Female

DAY ON TEST: 29

DOSE: 6.25mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204997

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Lung | * Lymph Node, Mandibular | * Lymph Node, Mesenteric |
| * Mammary Gland | * Nose | * Ovary | * Pancreas |
| * Parathyroid Gland | * Pituitary Gland | * Salivary Glands | * Skin |
| * Spleen | * Stomach, Forestomach | * Stomach, Glandular | * Thymus |
| * Thyroid Gland | * Trachea | * Urinary Bladder | * Uterus |

OBSERVATIONS

- | | | | |
|----------|------------|------------------------|-----------------------|
| * Kidney | | Nephropathy | Chronicprogr, Minimal |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Minimal |
| | Hepatocyte | Hypertrophy | Marked |

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 794

TRT#: 8

SEX: Female

DAY ON TEST: 29

DOSE: 6.25mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204998

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Lung | * Lymph Node, Mandibular | * Lymph Node, Mesenteric |
| * Mammary Gland | * Nose | * Ovary | * Pancreas |
| * Parathyroid Gland | * Pituitary Gland | * Salivary Glands | * Skin |
| * Spleen | * Stomach, Forestomach | * Stomach, Glandular | * Thymus |
| * Thyroid Gland | * Trachea | * Urinary Bladder | * Uterus |

OBSERVATIONS

- | | | | |
|----------|------------|------------------------|-----------------------|
| * Kidney | | Nephropathy | Chronicprogr, Minimal |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Marked |
| | Hepatocyte | Hypertrophy | Marked |

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 795

TRT#: 8

SEX: Female

DAY ON TEST: 29

DOSE: 6.25mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1204999

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver	Hepatocyte	Cytoplasmic Alteration	Moderate
	Hepatocyte	Hypertrophy	Marked

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 796

TRT#: 8

SEX: Female

DAY ON TEST: 29

DOSE: 6.25mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1205000

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Kidney | * Lung | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric | * Mammary Gland | * Nose | * Ovary |
| * Pancreas | * Parathyroid Gland | * Pituitary Gland | * Salivary Glands |
| * Skin | * Spleen | * Stomach, Forestomach | * Stomach, Glandular |
| * Thymus | * Thyroid Gland | * Trachea | * Urinary Bladder |
| * Uterus | | | |

OBSERVATIONS

- | | | | |
|---------|------------|------------------------|----------|
| * Liver | Hepatocyte | Cytoplasmic Alteration | Moderate |
| | Hepatocyte | Hypertrophy | Marked |

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 797

TRT#: 8

SEX: Female

DAY ON TEST: 29

DOSE: 6.25mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1205001

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Kidney | * Lung | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric | * Mammary Gland | * Nose | * Ovary |
| * Pancreas | * Parathyroid Gland | * Pituitary Gland | * Salivary Glands |
| * Skin | * Spleen | * Stomach, Forestomach | * Stomach, Glandular |
| * Thymus | * Thyroid Gland | * Trachea | * Urinary Bladder |
| * Uterus | | | |

OBSERVATIONS

- | | | | |
|---------|------------|------------------------|--------|
| * Liver | Hepatocyte | Cytoplasmic Alteration | Mild |
| | Hepatocyte | Hypertrophy | Marked |

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 798

TRT#: 8

SEX: Female

DAY ON TEST: 29

DOSE: 6.25mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1205002

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Kidney | * Lung | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric | * Mammary Gland | * Nose | * Ovary |
| * Pancreas | * Pituitary Gland | * Salivary Glands | * Skin |
| * Spleen | * Stomach, Forestomach | * Stomach, Glandular | * Thymus |
| * Thyroid Gland | * Trachea | * Urinary Bladder | * Uterus |

MISSING

- * Parathyroid Gland

OBSERVATIONS

- | | | | |
|---------|------------|------------------------|--------|
| * Liver | Hepatocyte | Cytoplasmic Alteration | Mild |
| | Hepatocyte | Hypertrophy | Marked |

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 799

TRT#: 8

SEX: Female

DAY ON TEST: 29

DOSE: 6.25mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1205003

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Bone Marrow | * Brain | * Clitoral Gland | * Esophagus |
| * Eye | * Harderian Gland | * Heart | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Kidney | * Lung | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric | * Mammary Gland | * Nose | * Ovary |
| * Pancreas | * Parathyroid Gland | * Pituitary Gland | * Salivary Glands |
| * Skin | * Spleen | * Stomach, Forestomach | * Stomach, Glandular |
| * Thymus | * Thyroid Gland | * Trachea | * Urinary Bladder |
| * Uterus | | | |

OBSERVATIONS

- | | | | |
|---------|------------|------------------------|----------|
| * Liver | Hepatocyte | Cytoplasmic Alteration | Moderate |
| | Hepatocyte | Hypertrophy | Marked |

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 800

TRT#: 8

SEX: Female

DAY ON TEST: 29

DOSE: 6.25mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1205004

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Kidney	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

OBSERVATIONS

* Liver	Hepatocyte	Cytoplasmic Alteration	Mild
	Hepatocyte	Hypertrophy	Marked

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 801

TRT#: 10

SEX: Female

DAY ON TEST: 15

DOSE: 12.5mg/kg/d F

DISP: Natural Death

HISTO: 1205005

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|--------------------------|--------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Clitoral Gland | * Esophagus | * Eye |
| * Harderian Gland | * Heart | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Ileum | * Kidney | * Lung |
| * Mammary Gland | * Nose | * Ovary | * Pancreas |
| * Pituitary Gland | * Salivary Glands | * Skin | * Stomach, Forestomach |
| * Stomach, Glandular | * Thyroid Gland | * Trachea | * Urinary Bladder |
| * Uterus | | | |

MISSING

- | | | | |
|-----------------------------|----------------------------|--------------------------|---------------------|
| * Intestine Small, Duodenum | * Intestine Small, Jejunum | * Lymph Node, Mesenteric | * Parathyroid Gland |
|-----------------------------|----------------------------|--------------------------|---------------------|

OBSERVATIONS

- | | | | |
|--------------------------|------------|------------------------|----------|
| * Bone Marrow | | Hypocellularity | Marked |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Minimal |
| | Hepatocyte | Hypertrophy | Moderate |
| * Lymph Node, Mandibular | | Atrophy | Marked |
| * Spleen | | Atrophy | Marked |
| * Thymus | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 802

TRT#: 10

SEX: Female

DAY ON TEST: 15

DOSE: 12.5mg/kg/d F

DISP: Natural Death

HISTO: 1205006

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Clitoral Gland | * Esophagus | * Eye |
| * Harderian Gland | * Heart | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Kidney | * Lung | * Mammary Gland | * Nose |
| * Ovary | * Pancreas | * Parathyroid Gland | * Pituitary Gland |
| * Salivary Glands | * Skin | * Stomach, Glandular | * Thyroid Gland |
| * Trachea | * Urinary Bladder | * Uterus | |

OBSERVATIONS

- | | | | |
|-------------------------------|------------|------------------------|----------|
| * Bone Marrow | | Hypocellularity | Marked |
| * Eye | | | |
| Note: Optic nerve is missing. | | | |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Minimal |
| | Hepatocyte | Hypertrophy | Moderate |
| * Lymph Node, Mandibular | | Atrophy | Marked |
| * Lymph Node, Mesenteric | | Atrophy | Marked |
| * Spleen | | Atrophy | Marked |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Mild |
| * Thymus | | Atrophy | Marked |
- [Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 803

TRT#: 10

SEX: Female

DAY ON TEST: 15

DOSE: 12.5mg/kg/d F

DISP: Natural Death

HISTO: 1205007

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Clitoral Gland | * Esophagus | * Eye |
| * Harderian Gland | * Heart | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Kidney | * Lung | * Mammary Gland | * Nose |
| * Ovary | * Pancreas | * Pituitary Gland | * Salivary Glands |
| * Skin | * Stomach, Glandular | * Thyroid Gland | * Trachea |
| * Urinary Bladder | * Uterus | | |

MISSING

- | | |
|--------------------------|---------------------|
| * Lymph Node, Mandibular | * Parathyroid Gland |
|--------------------------|---------------------|

OBSERVATIONS

- | | | | |
|--------------------------|------------|------------------------|----------|
| * Bone Marrow | | Hypocellularity | Marked |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Minimal |
| | Hepatocyte | Hypertrophy | Moderate |
| * Lymph Node, Mesenteric | | Atrophy | Marked |
| * Spleen | | Atrophy | Marked |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Moderate |
| * Thymus | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 804

TRT#: 10

SEX: Female

DAY ON TEST: 17

DOSE: 12.5mg/kg/d F

DISP: Natural Death

HISTO: 1205008

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Clitoral Gland | * Esophagus | * Eye |
| * Harderian Gland | * Heart | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Kidney | * Lung | * Mammary Gland | * Nose |
| * Ovary | * Pancreas | * Parathyroid Gland | * Pituitary Gland |
| * Salivary Glands | * Skin | * Stomach, Glandular | * Thyroid Gland |
| * Trachea | * Urinary Bladder | * Uterus | |

MISSING

- * Lymph Node, Mandibular

OBSERVATIONS

- | | | | |
|--------------------------|------------|-----------------|----------|
| * Bone Marrow | | Hypocellularity | Marked |
| * Liver | Hepatocyte | Hypertrophy | Moderate |
| * Lymph Node, Mesenteric | | Atrophy | Marked |
| * Spleen | | Atrophy | Marked |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Mild |
| * Thymus | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 805

TRT#: 10

SEX: Female

DAY ON TEST: 13

DOSE: 12.5mg/kg/d F

DISP: Natural Death

HISTO: 1205009

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Clitoral Gland | * Esophagus | * Eye |
| * Harderian Gland | * Heart | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Kidney | * Lung | * Mammary Gland | * Nose |
| * Ovary | * Pancreas | * Parathyroid Gland | * Pituitary Gland |
| * Salivary Glands | * Skin | * Spleen | * Stomach, Glandular |
| * Thyroid Gland | * Trachea | * Urinary Bladder | * Uterus |

OBSERVATIONS

- | | | | |
|--------------------------|------------|------------------------|---------|
| * Bone Marrow | | Hypocellularity | Marked |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Minimal |
| | Hepatocyte | Hypertrophy | Mild |
| * Lymph Node, Mandibular | | Atrophy | Marked |
| * Lymph Node, Mesenteric | | Atrophy | Marked |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Minimal |
| * Thymus | | Atrophy | Marked |

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 806

TRT#: 10

SEX: Female

DAY ON TEST: 27

DOSE: 12.5mg/kg/d F

DISP: Natural Death

HISTO: 1205010

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Clitoral Gland | * Esophagus | * Eye |
| * Harderian Gland | * Heart | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Kidney | * Lung | * Mammary Gland | * Nose |
| * Ovary | * Pancreas | * Parathyroid Gland | * Pituitary Gland |
| * Salivary Glands | * Skin | * Stomach, Glandular | * Thyroid Gland |
| * Trachea | * Urinary Bladder | * Uterus | |

OBSERVATIONS

- | | | | |
|--------------------------|------------|------------------------|----------|
| * Bone Marrow | | Hypocellularity | Marked |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Minimal |
| | Hepatocyte | Hypertrophy | Mild |
| | Hepatocyte | Necrosis | Minimal |
| * Lymph Node, Mandibular | | Atrophy | Mild |
| * Lymph Node, Mesenteric | | Atrophy | Marked |
| * Spleen | | Atrophy | Marked |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Moderate |
| * Thymus | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 807

TRT#: 10

SEX: Female

DAY ON TEST: 29

DOSE: 12.5mg/kg/d F

DISP: Terminal Sacrifice

HISTO: 1205011

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Clitoral Gland | * Esophagus | * Eye |
| * Harderian Gland | * Heart | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Lung | * Lymph Node, Mesenteric | * Mammary Gland | * Nose |
| * Ovary | * Pancreas | * Parathyroid Gland | * Pituitary Gland |
| * Salivary Glands | * Skin | * Spleen | * Stomach, Forestomach |
| * Stomach, Glandular | * Thymus | * Thyroid Gland | * Trachea |
| * Urinary Bladder | * Uterus | | |

OBSERVATIONS

- | | | | |
|--------------------------|------------|------------------------|-----------------------|
| * Bone Marrow | | Hypocellularity | Mild |
| * Kidney | | Nephropathy | Chronicprogr, Minimal |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Marked |
| | Hepatocyte | Hypertrophy | Marked |
| * Lymph Node, Mandibular | | Atrophy | Mild |

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 808

TRT#: 10

SEX: Female

DAY ON TEST: 16

DOSE: 12.5mg/kg/d F

DISP: Natural Death

HISTO: 1205012

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Clitoral Gland | * Esophagus | * Eye |
| * Harderian Gland | * Heart | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Kidney | * Lung | * Mammary Gland | * Nose |
| * Ovary | * Pancreas | * Parathyroid Gland | * Pituitary Gland |
| * Salivary Glands | * Skin | * Stomach, Glandular | * Thyroid Gland |
| * Trachea | * Urinary Bladder | * Uterus | |

OBSERVATIONS

- | | | | |
|--------------------------|------------|------------------------|----------|
| * Bone Marrow | | Hypocellularity | Marked |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Mild |
| | Hepatocyte | Hypertrophy | Moderate |
| | Hepatocyte | Necrosis | Minimal |
| * Lymph Node, Mandibular | | Atrophy | Marked |
| * Lymph Node, Mesenteric | | Atrophy | Marked |
| * Spleen | | Atrophy | Marked |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Mild |
| * Thymus | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 809

TRT#: 10

SEX: Female

DAY ON TEST: 25

DOSE: 12.5mg/kg/d F

DISP: Natural Death

HISTO: 1205013

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Clitoral Gland | * Esophagus | * Eye |
| * Harderian Gland | * Heart | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Kidney | * Mammary Gland | * Nose | * Ovary |
| * Pancreas | * Parathyroid Gland | * Pituitary Gland | * Salivary Glands |
| * Skin | * Stomach, Forestomach | * Stomach, Glandular | * Thyroid Gland |
| * Trachea | * Urinary Bladder | * Uterus | |

OBSERVATIONS

- | | | | |
|--------------------------|------------|------------------------|----------|
| * Bone Marrow | | Hypocellularity | Marked |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Minimal |
| | Hepatocyte | Hypertrophy | Moderate |
| | Hepatocyte | Necrosis | Minimal |
| * Lung | Vein | Thrombus | Mild |
| * Lymph Node, Mandibular | | Atrophy | Moderate |
| * Lymph Node, Mesenteric | | Atrophy | Marked |
| * Spleen | | Atrophy | Marked |
| * Thymus | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 810

TRT#: 10

SEX: Female

DAY ON TEST: 27

DOSE: 12.5mg/kg/d F

DISP: Natural Death

HISTO: 1205014

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|----------------------------|--------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Clitoral Gland | * Esophagus | * Eye |
| * Harderian Gland | * Heart | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Jejunum | * Kidney |
| * Lung | * Mammary Gland | * Nose | * Ovary |
| * Pancreas | * Pituitary Gland | * Salivary Glands | * Skin |
| * Stomach, Glandular | * Thyroid Gland | * Trachea | * Urinary Bladder |
| * Uterus | | | |

MISSING

- | | |
|--------------------------|---------------------|
| * Intestine Small, Ileum | * Parathyroid Gland |
|--------------------------|---------------------|

OBSERVATIONS

- | | | | |
|-------------------------------|------------|------------------------|---------|
| * Bone Marrow | | Hypocellularity | Marked |
| * Eye | | | |
| Note: Optic nerve is missing. | | | |
| * Liver | Hepatocyte | Cytoplasmic Alteration | Mild |
| | Hepatocyte | Hypertrophy | Marked |
| | Hepatocyte | Necrosis | Mild |
| * Lymph Node, Mandibular | | Atrophy | Marked |
| * Lymph Node, Mesenteric | | Atrophy | Marked |
| * Spleen | | Atrophy | Marked |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Minimal |
| * Thymus | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 811

TRT#: 12

SEX: Female

DAY ON TEST: 12

DOSE: 25mg/kg/d F

DISP: Natural Death

HISTO: 1205015

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Clitoral Gland | * Esophagus | * Eye |
| * Harderian Gland | * Heart | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Lung | * Mammary Gland | * Nose | * Ovary |
| * Pancreas | * Parathyroid Gland | * Pituitary Gland | * Salivary Glands |
| * Skin | * Stomach, Glandular | * Thyroid Gland | * Trachea |
| * Urinary Bladder | * Uterus | | |

OBSERVATIONS

- | | | | |
|--------------------------|------------|-----------------|-----------------------|
| * Bone Marrow | | Hypocellularity | Moderate |
| * Kidney | | Nephropathy | Chronicprogr, Minimal |
| * Liver | Hepatocyte | Hypertrophy | Moderate |
| | Hepatocyte | Necrosis | Minimal |
| * Lymph Node, Mandibular | | Atrophy | Moderate |
| * Lymph Node, Mesenteric | | Atrophy | Moderate |
| * Spleen | | Atrophy | Marked |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Mild |
| * Thymus | | Atrophy | Marked |

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 812

TRT#: 12

SEX: Female

DAY ON TEST: 12

DOSE: 25mg/kg/d F

DISP: Natural Death

HISTO: 1205016

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- * Adrenal Cortex
- * Adrenal Medulla
- * Blood Vessel
- * Bone
- * Brain
- * Clitoral Gland
- * Esophagus
- * Eye
- * Harderian Gland
- * Heart
- * Intestine Large, Cecum
- * Intestine Large, Colon
- * Intestine Large, Rectum
- * Intestine Small, Duodenum
- * Intestine Small, Ileum
- * Intestine Small, Jejunum
- * Lung
- * Mammary Gland
- * Ovary
- * Pancreas
- * Parathyroid Gland
- * Pituitary Gland
- * Salivary Glands
- * Skin
- * Stomach, Glandular
- * Thyroid Gland
- * Trachea
- * Urinary Bladder
- * Uterus

OBSERVATIONS

- * Bone Marrow
 - * Kidney
 - * Liver
 - * Lymph Node, Mandibular
 - * Lymph Node, Mesenteric
 - * Nose
 - * Spleen
 - * Stomach, Forestomach
 - * Thymus
- | | | | |
|--|---------------|-----------------|-----------------------|
| | Hepatocyte | Hypocellularity | Moderate |
| | | Nephropathy | Chronicprogr, Minimal |
| | | Hypertrophy | Mild |
| | | Atrophy | Marked |
| | | Atrophy | Moderate |
| | Olfactory Epi | Degeneration | Mild |
| | Olfactory Epi | Hyperplasia | Minimal |
| | Olfactory Epi | Inflammation | Suppurative, Moderate |
| | | Atrophy | Marked |
| | Epithelium | Hyperplasia | Minimal |
| | | Atrophy | Marked |

* PROTOCOL REQUIRED TISSUE

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 813

TRT#: 12

SEX: Female

DAY ON TEST: 12

DOSE: 25mg/kg/d F

DISP: Natural Death

HISTO: 1205017

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Clitoral Gland | * Esophagus | * Eye |
| * Harderian Gland | * Heart | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Kidney | * Lung | * Mammary Gland | * Ovary |
| * Pancreas | * Parathyroid Gland | * Pituitary Gland | * Salivary Glands |
| * Skin | * Stomach, Glandular | * Thyroid Gland | * Trachea |
| * Urinary Bladder | * Uterus | | |

OBSERVATIONS

- | | | | |
|--------------------------|---------------|-----------------|----------|
| * Bone Marrow | | Hypocellularity | Moderate |
| * Liver | Hepatocyte | Hypertrophy | Moderate |
| | Hepatocyte | Necrosis | Minimal |
| * Lymph Node, Mandibular | | Atrophy | Mild |
| * Lymph Node, Mesenteric | | Atrophy | Moderate |
| * Nose | Olfactory Epi | Degeneration | Minimal |
| * Spleen | | Atrophy | Marked |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Minimal |
| * Thymus | | Atrophy | Marked |

* PROTOCOL REQUIRED TISSUE

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 814

TRT#: 12

SEX: Female

DAY ON TEST: 11

DOSE: 25mg/kg/d F

DISP: Natural Death

HISTO: 1205018

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Clitoral Gland | * Esophagus | * Eye |
| * Harderian Gland | * Heart | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Lung | * Mammary Gland | * Nose | * Ovary |
| * Pancreas | * Parathyroid Gland | * Pituitary Gland | * Salivary Glands |
| * Skin | * Stomach, Glandular | * Thyroid Gland | * Trachea |
| * Urinary Bladder | * Uterus | | |

OBSERVATIONS

- | | | | |
|--------------------------|------------|-----------------|-----------------------|
| * Bone Marrow | | Hypocellularity | Moderate |
| * Kidney | | Nephropathy | Chronicprogr, Minimal |
| * Liver | Hepatocyte | Hypertrophy | Moderate |
| * Lymph Node, Mandibular | | Atrophy | Moderate |
| * Lymph Node, Mesenteric | | Atrophy | Marked |
| * Spleen | | Atrophy | Marked |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Minimal |
| * Thymus | | Atrophy | Marked |

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 815

TRT#: 12

SEX: Female

DAY ON TEST: 12

DOSE: 25mg/kg/d F

DISP: Natural Death

HISTO: 1205019

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Kidney	* Lung	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Bone Marrow		Hypocellularity	Moderate
* Liver	Hepatocyte	Hypertrophy	Moderate
* Lymph Node, Mandibular		Atrophy	Marked
* Spleen		Atrophy	Marked
* Stomach, Forestomach		Inflammation	Chronic Active, Minimal
* Thymus		Atrophy	Marked

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 816

TRT#: 12

SEX: Female

DAY ON TEST: 12

DOSE: 25mg/kg/d F

DISP: Natural Death

HISTO: 1205020

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Clitoral Gland | * Esophagus | * Eye |
| * Harderian Gland | * Heart | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Kidney | * Lung | * Mammary Gland | * Ovary |
| * Pancreas | * Pituitary Gland | * Salivary Glands | * Skin |
| * Stomach, Glandular | * Thyroid Gland | * Trachea | * Urinary Bladder |
| * Uterus | | | |

MISSING

- * Parathyroid Gland

OBSERVATIONS

- | | | | |
|--------------------------|---------------|-----------------|----------------------|
| * Bone Marrow | | Hypocellularity | Moderate |
| * Liver | Hepatocyte | Hypertrophy | Mild |
| | Hepatocyte | Necrosis | Minimal |
| * Lymph Node, Mandibular | | Atrophy | Moderate |
| * Lymph Node, Mesenteric | | Atrophy | Mild |
| * Nose | Olfactory Epi | Degeneration | Minimal |
| | Olfactory Epi | Inflammation | Suppurative, Minimal |
| * Spleen | | Atrophy | Marked |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Mild |
| * Thymus | | Atrophy | Marked |

* PROTOCOL REQUIRED TISSUE

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 817

TRT#: 12

SEX: Female

DAY ON TEST: 15

DOSE: 25mg/kg/d F

DISP: Natural Death

HISTO: 1205021

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Clitoral Gland | * Esophagus | * Eye |
| * Harderian Gland | * Heart | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Mammary Gland | * Ovary | * Pancreas | * Pituitary Gland |
| * Salivary Glands | * Skin | * Stomach, Forestomach | * Stomach, Glandular |
| * Thyroid Gland | * Trachea | * Urinary Bladder | * Uterus |

MISSING

- * Parathyroid Gland

OBSERVATIONS

- | | | | |
|--------------------------|---------------|-----------------|----------------------|
| * Bone Marrow | | Hypocellularity | Moderate |
| * Kidney | | Cyst | Focal |
| * Liver | Hepatocyte | Hypertrophy | Moderate |
| * Lung | Arteriole | Thrombus | Focal, Minimal |
| * Lymph Node, Mandibular | | Atrophy | Marked |
| * Lymph Node, Mesenteric | | Atrophy | Marked |
| * Nose | Olfactory Epi | Degeneration | Marked |
| | Olfactory Epi | Inflammation | Suppurative, Minimal |
| * Spleen | | Atrophy | Marked |
| * Thymus | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 818

TRT#: 12

SEX: Female

DAY ON TEST: 12

DOSE: 25mg/kg/d F

DISP: Natural Death

HISTO: 1205022

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Kidney	* Lung	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Bone Marrow		Hypocellularity	Moderate
* Liver	Hepatocyte	Hypertrophy	Moderate
* Lymph Node, Mandibular		Atrophy	Mild
* Lymph Node, Mesenteric		Atrophy	Mild
* Spleen		Atrophy	Marked
* Thymus		Atrophy	Marked

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 819

TRT#: 12

SEX: Female

DAY ON TEST: 12

DOSE: 25mg/kg/d F

DISP: Natural Death

HISTO: 1205023

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Clitoral Gland | * Esophagus | * Eye |
| * Harderian Gland | * Heart | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Kidney | * Lung | * Mammary Gland | * Ovary |
| * Pancreas | * Parathyroid Gland | * Pituitary Gland | * Salivary Glands |
| * Skin | * Stomach, Glandular | * Thyroid Gland | * Trachea |
| * Urinary Bladder | * Uterus | | |

OBSERVATIONS

- | | | | |
|--------------------------|---------------|-----------------|----------|
| * Bone Marrow | | Hypocellularity | Marked |
| * Liver | Hepatocyte | Hypertrophy | Mild |
| * Lymph Node, Mandibular | | Atrophy | Moderate |
| * Lymph Node, Mesenteric | | Atrophy | Mild |
| * Nose | Olfactory Epi | Degeneration | Mild |
| * Spleen | | Atrophy | Marked |
| * Stomach, Forestomach | Epithelium | Hyperplasia | Mild |
| * Thymus | | Atrophy | Marked |

[Atrophy TGLs = 1 - 6]

Experiment Number: 04049 - 01

Test Type: 28-DAY

Route: GAVAGE

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorononanoic Acid

CAS Number: 375-95-1

Date Report Requested: 02/06/2018

Time Report Requested: 12:36:11

First Dose M/F: 02/02/12 / 02/03/12

Lab: BAT

ANIMAL ID: 820

TRT#: 12

SEX: Female

DAY ON TEST: 14

DOSE: 25mg/kg/d F

DISP: Natural Death

HISTO: 1205024

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- | | | | |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex | * Adrenal Medulla | * Blood Vessel | * Bone |
| * Brain | * Clitoral Gland | * Esophagus | * Eye |
| * Harderian Gland | * Heart | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Kidney | * Lung | * Mammary Gland | * Nose |
| * Ovary | * Pancreas | * Parathyroid Gland | * Pituitary Gland |
| * Salivary Glands | * Skin | * Stomach, Forestomach | * Stomach, Glandular |
| * Thyroid Gland | * Trachea | * Urinary Bladder | * Uterus |

MISSING

- * Lymph Node, Mandibular

OBSERVATIONS

- | | | | |
|--------------------------|------------|-----------------|----------|
| * Bone Marrow | | Hypocellularity | Moderate |
| * Liver | Hepatocyte | Hypertrophy | Mild |
| * Lymph Node, Mesenteric | | Atrophy | Moderate |
| * Spleen | | Atrophy | Marked |
| * Thymus | | Atrophy | Marked |

*** END OF REPORT ***