**Appendix B**

**Test Stimuli**

**Attached are the list formats for smokeless tobacco. The same formats will be tested for cigarettes and roll-your own tobacco.**

# Tobacco Product: Brand X Smokeless Tobacco

| Tobacco Amount Per Gram | CHEMICAL | CA | HB | RP | AD |
|---|---|---|---|---|---|
| 0.97 – 72.3 µg | Acetaldehyde | ■ | | | ■ |
| 0.1 – 3.5 µg | Arsenic | ■ | ■ | ■ | |
| 1.1 – 57.3 ng | Benzo[a]pyrene | ■ | | | |
| 0.1 – 3.1 µg | Cadmium | ■ | | ■ | |
| 0.5 – 19.4 µg | Crotonaldehyde | ■ | | | |
| 0.2 -72.3 µg | Formaldehyde | ■ | | | |
| 0.1 – 1.6 µg | 4-(Methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK) | ■ | | | |
| 11.3 – 26.7 mg | Nicotine | | | ■ | ■ |
| 0.9 – 6.9 µg | N-Nitrosonornicotine (NNN) | ■ | | | |

**There are many other chemicals that have been linked to the health problems on this list. The information on these chemicals is not currently available.**

A machine is used to test for these chemicals. The amount of chemical that gets into the body may be higher or lower depending on how a person uses the tobacco product. Companies may use different tests to measure these chemicals. Results may vary.

## KEY

**Chemicals have been linked to:**

- **CA** Cancer
- **HB** Heart and Blood Vessel Problems
- **RP** Reproductive Problems
- **AD** Addiction

---

- **ND** Not Detected
- ✦ The information is not currently available

mg= milligram
µg = microgram
ng = nanogram
pg= picogram

# Tobacco Product: Brand X Smokeless Tobacco

| Tobacco Amount Per Gram | CHEMICAL | CA | HB | RP | AD |
|---|---|---|---|---|---|
| 0.97 – 72.3 µg | Acetaldehyde | ■ | | | ■ |
| 0.1 – 3.5 µg | Arsenic | ■ | ■ | ■ | |
| 1.1 – 57.3 ng | Benzo[a]pyrene | ■ | | | |
| 0.1 – 3.1 µg | Cadmium | ■ | | ■ | |
| 0.5 – 19.4 µg | Crotonaldehyde | ■ | | | |
| 0.2 -72.3 µg | Formaldehyde | ■ | | | |
| 0.1 – 1.6 µg | 4-(Methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK) | ■ | | | |
| 11.3 – 26.7 mg | Nicotine | | | ■ | ■ |
| 0.9 – 6.9 µg | N-Nitrosonornicotine (NNN) | ■ | | | |

## The information is not currently available on the following chemicals.

| Tobacco Amount Per Gram | CHEMICAL | CA | HB | RP | AD |
|---|---|---|---|---|---|
| ✦ | Aflatoxin B1 | ■ | | | |
| ✦ | Ammonia | | | | |
| ✦ | Anabasine | | | | ■ |
| ✦ | Benz[a]anthracene | ■ | ■ | | |
| ✦ | Benzo[b]fluoranthene | ■ | ■ | | |
| ✦ | Benzo[k]fluoranthene | ■ | ■ | | |
| ✦ | Beryllium | ■ | | | |
| ✦ | Chromium | ■ | | ■ | |
| ✦ | Chrysene | ■ | ■ | | |
| ✦ | Coumarin (banned in food) | | | | |
| ✦ | Dibenz[a,h]anthracene | ■ | | | |
| ✦ | Ethyl carbamate (urethane) | ■ | | ■ | |
| ✦ | Indeno[1,2,3-cd]pyrene | ■ | | | |
| ✦ | Lead | ■ | ■ | ■ | |
| ✦ | Mercury | ■ | | ■ | |
| ✦ | Naphthalene | ■ | | | |
| ✦ | Nickel | ■ | | | |
| ✦ | N-Nitrosodiethanolamine (NDELA) | ■ | | | |
| ✦ | N-Nitrosodimethylamine (NDMA) | ■ | | | |
| ✦ | N-Nitrosomorpholine (NMOR) | ■ | | | |
| ✦ | N-Nitrosopiperidine (NPIP) | ■ | | | |
| ✦ | N-Nitrosopyrrolidine (NPYR) | ■ | | | |
| ✦ | N-Nitrososarcosine (NSAR) | ■ | | | |
| ✦ | Nornicotine | | | | ■ |
| ✦ | Polonium-210 | ■ | | | |
| ✦ | Selenium | | | | |
| ✦ | Uranium-235 | ■ | | | |
| ✦ | Uranium-238 | ■ | | | |

A machine is used to test for these chemicals. The amount of chemical that gets into the body may be higher or lower depending on how a person uses the tobacco product. Companies may use different tests to measure these chemicals. Results may vary.

**KEY**

**Chemicals have been linked to:**

- **CA** Cancer
- **HB** Heart and Blood Vessel Problems
- **RP** Reproductive Problems
- **AD** Addiction

---

- **ND** Not Detected
- ✦ The information is not currently available

mg= milligram
µg = microgram
ng = nanogram
pg= picogram

# Tobacco Product: Brand X Smokeless Tobacco

| Tobacco Amount Per Gram | CHEMICAL | CA | HB | RP | AD |
|---|---|---|---|---|---|
| 0.97 – 72.3 µg | Acetaldehyde | ■ | | | ■ |
| ✦ | Aflatoxin B1 | ■ | | | |
| ✦ | Ammonia | | | | |
| ✦ | Anabasine | | | | ■ |
| 0.1 – 3.5 µg | Arsenic | ■ | ■ | ■ | |
| ✦ | Benz[a]anthracene | ■ | ■ | | |
| ✦ | Benzo[b]fluoranthene | ■ | ■ | | |
| ✦ | Benzo[k]fluoranthene | ■ | ■ | | |
| 1.1 – 57.3 ng | Benzo[a]pyrene | ■ | | | |
| ✦ | Beryllium | ■ | | | |
| 0.1 – 3.1 µg | Cadmium | ■ | | ■ | |
| ✦ | Chromium | ■ | | ■ | |
| ✦ | Chrysene | ■ | ■ | | |
| ✦ | Coumarin (banned in food) | | | | |
| 0.5 – 19.4 µg | Crotonaldehyde | ■ | | | |
| ✦ | Dibenz[a,h]anthracene | ■ | | | |
| ✦ | Ethyl carbamate (urethane) | ■ | | ■ | |
| 0.2 -72.3 µg | Formaldehyde | ■ | | | |
| ✦ | Indeno[1,2,3-cd]pyrene | ■ | | | |
| ✦ | Lead | ■ | ■ | ■ | |
| ✦ | Mercury | ■ | | ■ | |
| 0.1 – 1.6 µg | 4-(Methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK) | ■ | | | |
| ✦ | Naphthalene | ■ | | | |
| ✦ | Nickel | ■ | | | |
| 11.3 – 26.7 mg | Nicotine | | | ■ | ■ |
| ✦ | N-Nitrosodiethanolamine (NDELA) | ■ | | | |
| ✦ | N-Nitrosodimethylamine (NDMA) | ■ | | | |
| ✦ | N-Nitrosomorpholine (NMOR) | ■ | | | |
| 0.9 – 6.9 µg | N-Nitrosonornicotine (NNN) | ■ | | | |
| ✦ | N-Nitrosopiperidine (NPIP) | ■ | | | |
| ✦ | N-Nitrosopyrrolidine (NPYR) | ■ | | | |
| ✦ | N-Nitrososarcosine (NSAR) | ■ | | | |
| ✦ | Nornicotine | | | | ■ |
| ✦ | Polonium-210 | ■ | | | |
| ✦ | Selenium | | | | |
| ✦ | Uranium-235 | ■ | | | |
| ✦ | Uranium-238 | ■ | | | |

**KEY**

**Chemicals have been linked to:**

**CA** Cancer

**HB** Heart and Blood Vessel Problems

**RP** Reproductive Problems

**AD** Addiction

**ND** Not Detected

✦ The information is not currently available

mg= milligram
µg = microgram
ng = nanogram
pg= picogram

A machine is used to test for these chemicals. The amount of chemical that gets into the body may be higher or lower depending on how a person uses the tobacco product. Companies may use different tests to measure these chemicals. Results may vary.

## Tobacco Product: Brand X Smokeless Tobacco

**All tobacco products contain chemicals.**

**The purpose of this list** is to provide information about the chemicals in this tobacco product that researchers have linked to health problems. Research is on going to find out which chemicals in tobacco and tobacco smoke cause harm.

**There may be other health problems and chemicals** that have not been discovered yet.

**Tobacco companies test** their tobacco for these chemicals and report the amounts to the FDA.

**Please note:** There is no safe tobacco product. Based on what we currently know, you can not tell your chance of developing a health problem by the number of chemicals or the amount of a chemical in a tobacco product.

| Amount Per Gram | CHEMICAL | Cancer | Heart and Blood Vessel Problems | Reproductive Problems | Addiction |
|---|---|---|---|---|---|
| 0.97 – 72.3 µg | Acetaldehyde | ■ | | | ■ |
| 0.1 – 3.5 µg | Arsenic | ■ | ■ | ■ | |
| 1.1 – 57.3 ng | Benzo[a]pyrene | ■ | | | |
| 0.1 – 3.1 µg | Cadmium | ■ | | ■ | |
| 0.5 – 19.4 µg | Crotonaldehyde | ■ | | | |
| 0.2 -72.3 µg | Formaldehyde | ■ | | | |
| 0.1 – 1.6 µg | 4-(Methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK) | ■ | | | |
| 11.3 – 26.7 mg | Nicotine | | | ■ | ■ |
| 0.9 – 6.9 µg | N-Nitrosonornicotine (NNN) | ■ | | | |

**There are many other chemicals that have been linked to the health problems on this list. The information on these chemicals is not currently available.**

### KEY

**Chemicals have been linked to:**

- Cancer
- Heart and Blood Vessel Problems
- Reproductive Problems
- Addiction

**ND** Not Detected

✦ The information is not currently available

### Where do these chemicals come from?

Many of these chemicals come from the **tobacco leaf**. The rest come from additives and the pouch if one is present.

mg= milligram
µg = microgram
ng = nanogram
pg= picogram

A machine is used to test for these chemicals. The amount of chemical that gets into the body may be higher or lower depending on how a person uses the tobacco product. Companies may use different tests to measure these chemicals. Results may vary.

# Tobacco Product: Brand X Smokeless Tobacco

**All tobacco products contain chemicals.**

**The purpose of this list** is to provide information about the chemicals in this tobacco product that researchers have linked to health problems. Research is on going to find out which chemicals in tobacco and tobacco smoke cause harm.

**There may be other health problems and chemicals** that have not been discovered yet.

**Tobacco companies test** their tobacco for these chemicals and report the amounts to the FDA.

**Please note:** There is no safe tobacco product. Based on what we currently know, you can not tell your chance of developing a health problem by the number of chemicals or the amount of a chemical in a tobacco product.

| Amount Per Gram | CHEMICAL | Cancer | Heart and Blood Vessel Problems | Reproductive Problems | Addiction |
|---|---|---|---|---|---|
| 0.97 – 72.3 µg | Acetaldehyde | ■ | | | ■ |
| 0.1 – 3.5 µg | Arsenic | ■ | ■ | ■ | |
| 1.1 – 57.3 ng | Benzo[a]pyrene | ■ | | | |
| 0.1 – 3.1 µg | Cadmium | ■ | | ■ | |
| 0.5 – 19.4 µg | Crotonaldehyde | ■ | | | |
| 0.2 -72.3 µg | Formaldehyde | ■ | | | |
| 0.1 – 1.6 µg | 4-(Methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK) | ■ | | | |
| 11.3 – 26.7 mg | Nicotine | | | ■ | ■ |
| 0.9 – 6.9 µg | N-Nitrosonornicotine (NNN) | ■ | | | |

## The information is not currently available on the following chemicals.

| Amount Per Gram | CHEMICAL | Cancer | Heart and Blood Vessel Problems | Reproductive Problems | Addiction |
|---|---|---|---|---|---|
| ✦ | Aflatoxin B1 | ■ | | | |
| ✦ | Ammonia | | | | |
| ✦ | Anabasine | | | | ■ |
| ✦ | Benz[a]anthracene | ■ | ■ | | |
| ✦ | Benzo[b]fluoranthene | ■ | ■ | | |
| ✦ | Benzo[k]fluoranthene | ■ | ■ | | |
| ✦ | Beryllium | ■ | | | |
| ✦ | Chromium | ■ | | ■ | |
| ✦ | Chrysene | ■ | ■ | | |
| ✦ | Coumarin (banned in food) | | | | |
| ✦ | Dibenz[a,h]anthracene | ■ | | | |
| ✦ | Ethyl carbamate (urethane) | ■ | | ■ | |
| ✦ | Indeno[1,2,3-cd]pyrene | ■ | | | |
| ✦ | Lead | ■ | ■ | ■ | |
| ✦ | Mercury | ■ | | ■ | |
| ✦ | Naphthalene | ■ | | | |
| ✦ | Nickel | ■ | | | |
| ✦ | N-Nitrosodiethanolamine (NDELA) | ■ | | | |
| ✦ | N-Nitrosodimethylamine (NDMA) | ■ | | | |
| ✦ | N-Nitrosomorpholine (NMOR) | ■ | | | |
| ✦ | N-Nitrosopiperidine (NPIP) | ■ | | | |
| ✦ | N-Nitrosopyrrolidine (NPYR) | ■ | | | |
| ✦ | N-Nitrososarcosine (NSAR) | ■ | | | |
| ✦ | Nornicotine | | | | ■ |
| ✦ | Polonium-210 | ■ | | | |
| ✦ | Selenium | | | | |
| ✦ | Uranium-235 | ■ | | | |
| ✦ | Uranium-238 | ■ | | | |

A machine is used to test for these chemicals. The amount of chemical that gets into the body may be higher or lower depending on how a person uses the tobacco product. Companies may use different tests to measure these chemicals. Results may vary.

**KEY**

**Chemicals have been linked to:**

- Cancer
- Heart and Blood Vessel Problems
- Reproductive Problems
- Addiction

**ND** Not Detected

✦ The information is not currently available

### Where do these chemicals come from?

Many of these chemicals come from the **tobacco leaf**. The rest come from additives and the pouch if one is present.

mg= milligram
µg = microgram
ng = nanogram
pg= picogram

## Tobacco Product: Brand X Smokeless Tobacco

**All tobacco products contain chemicals.**

**The purpose of this list** is to provide information about the chemicals in this tobacco product that researchers have linked to health problems. Research is on going to find out which chemicals in tobacco and tobacco smoke cause harm.

**There may be other health problems and chemicals** that have not been discovered yet.

**Tobacco companies test** their tobacco for these chemicals and report the amounts to the FDA.

**Please note:** There is no safe tobacco product. Based on what we currently know, you can not tell your chance of developing a health problem by the number of chemicals or the amount of a chemical in a tobacco product.

| Amount Per Gram | CHEMICAL | Cancer | Heart and Blood Vessel Problems | Reproductive Problems | Addiction |
|---|---|---|---|---|---|
| 0.97 – 72.3 µg | Acetaldehyde | ■ | | | ■ |
| ✦ | Aflatoxin B1 | ■ | | | |
| ✦ | Ammonia | | | | |
| ✦ | Anabasine | | | | ■ |
| 0.1 – 3.5 µg | Arsenic | ■ | ■ | ■ | |
| ✦ | Benz[a]anthracene | ■ | ■ | | |
| ✦ | Benzo[b]fluoranthene | ■ | ■ | | |
| ✦ | Benzo[k]fluoranthene | ■ | ■ | | |
| 1.1 – 57.3 ng | Benzo[a]pyrene | ■ | | | |
| ✦ | Beryllium | ■ | | | |
| 0.1 – 3.1 µg | Cadmium | ■ | | ■ | |
| ✦ | Chromium | ■ | | ■ | |
| ✦ | Chrysene | ■ | ■ | | |
| ✦ | Coumarin (banned in food) | | | | |
| 0.5 – 19.4 µg | Crotonaldehyde | ■ | | | |
| ✦ | Dibenz[a,h]anthracene | ■ | | | |
| ✦ | Ethyl carbamate (urethane) | ■ | | ■ | |
| 0.2 -72.3 µg | Formaldehyde | ■ | | | |
| ✦ | Indeno[1,2,3-cd]pyrene | ■ | | | |
| ✦ | Lead | ■ | ■ | ■ | |
| ✦ | Mercury | ■ | | ■ | |
| 0.1 – 1.6 µg | 4-(Methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK) | ■ | | | |
| ✦ | Naphthalene | ■ | | | |
| ✦ | Nickel | ■ | | | |
| 11.3 – 26.7 mg | Nicotine | | | ■ | ■ |
| ✦ | N-Nitrosodiethanolamine (NDELA) | ■ | | | |
| ✦ | N-Nitrosodimethylamine (NDMA) | ■ | | | |
| ✦ | N-Nitrosomorpholine (NMOR) | ■ | | | |
| 0.9 – 6.9 µg | N-Nitrosonornicotine (NNN) | ■ | | | |
| ✦ | N-Nitrosopiperidine (NPIP) | ■ | | | |
| ✦ | N-Nitrosopyrrolidine (NPYR) | ■ | | | |
| ✦ | N-Nitrososarcosine (NSAR) | ■ | | | |
| ✦ | Nornicotine | | | | ■ |
| ✦ | Polonium-210 | ■ | | | |
| ✦ | Selenium | | | | |
| ✦ | Uranium-235 | ■ | | | |
| ✦ | Uranium-238 | ■ | | | |

A machine is used to test for these chemicals. The amount of chemical that gets into the body may be higher or lower depending on how a person uses the tobacco product. Companies may use different tests to measure these chemicals. Results may vary.

**KEY**

**Chemicals have been linked to:**

- Cancer
- Heart and Blood Vessel Problems
- Reproductive Problems
- Addiction

**ND** Not Detected

✦ The information is not currently available

### Where do these chemicals come from?

Many of these chemicals come from the **tobacco leaf**. The rest come from additives and the pouch if one is present.

mg= milligram
µg = microgram
ng = nanogram
pg= picogram