

# CHEMICAL COMPOUNDS IN CIGARETTE SMOKE

THIS GRAPHIC OFFERS A SUMMARY OF A SELECTION OF HAZARDOUS COMPOUNDS IN CIGARETTE SMOKE & THEIR EFFECTS

ESTIMATED NUMBER OF CHEMICAL COMPOUNDS IN CIGARETTE SMOKE

7,357

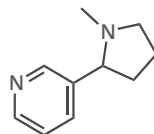
70

NUMBER OF THESE COMPOUNDS WITH CONFIRMED CARCINOGENIC ACTIVITY



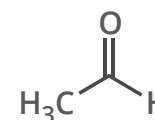
The compounds shown below are all found in cigarette smoke. The mass figures, given in  $\mu\text{g}$ , take into account both mainstream (inhaled) and sidestream smoke. 1  $\mu\text{g}$  is equal to 1 millionth of a gram. Amounts of these compounds vary in different brands of cigarettes - these figures are approximate.

## NICOTINE



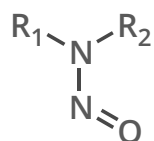
- Approx. 919 $\mu\text{g}$  per cigarette
- Addictive
- Increases heart rate
- Increases blood pressure
- Increases blood glucose
- Lethal dose: around 500-1000mg

## ACETALDEHYDE



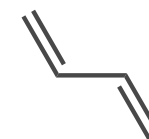
- Approx. 680-1571 $\mu\text{g}$  per cigarette
- **Known animal carcinogen**
- **Probable human carcinogen**
- Irritant to skin & eyes
- Irritant to respiratory tract

## N-NITROSAMINES



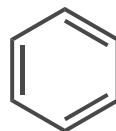
- Large class of compounds
- Several are tobacco-specific
- **Known human carcinogens**
- Most carcinogenic: NNK & NNN
- NNK: approx. 0.3 $\mu\text{g}$  per cigarette
- NNN: approx. 2-50 $\mu\text{g}$  per cigarette
- May cause reproductive damage

## 1,3-BUTADIENE



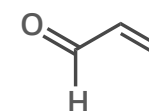
- Approx. 36-191 $\mu\text{g}$  per cigarette
- **Known human carcinogen**
- **Suspected human teratogen**
- Irritant to eyes & skin
- Irritant to upper respiratory tract

## BENZENE



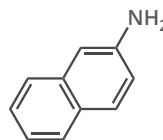
- Approx. 46-272 $\mu\text{g}$  per cigarette
- **Known human carcinogen**
- Damages bone marrow
- Lowers red blood cell count
- May harm reproductive organs

## ACROLEIN



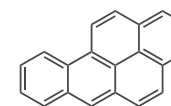
- Approx. 69-306 $\mu\text{g}$  per cigarette
- **Possible human carcinogen**
- **Known DNA mutagen**
- Irritant to skin & nasal passages
- May contribute to heart disease

## AROMATIC AMINES



- Large class of compounds
- Includes 2-aminonaphthalene:
- **Known human carcinogen**
- Linked with bladder cancer
- Approx. 0.04 $\mu\text{g}$  per cigarette

## POLYAROMATICS



- Large class of compounds
- Includes benzo[a]pyrene:
- **Known human carcinogen**
- **Known DNA mutagen**
- Affects reproductive capacity
- Up to 0.14 $\mu\text{g}$  per cigarette