



**BITUMENS AND BITUMEN EMISSIONS,
AND SOME N- AND S-HETEROCYCLIC
POLYCYCLIC AROMATIC
HYDROCARBONS**

VOLUME 103

This publication represents the views and expert opinions of an IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, which met in Lyon, 11-18 October 2011

LYON, FRANCE - 2013

**IARC MONOGRAPHS
ON THE EVALUATION
OF CARCINOGENIC RISKS
TO HUMANS**

LIST OF ABBREVIATIONS

1-OHP	1-hydroxypyrene
AFC	asphalt-fume condensate
AhR	aryl hydrocarbon receptor
AM	arithmetic mean
BaP	benzo[<i>a</i>]pyrene
BDL	below the detection limit
BPDE	7,8-dihydroxy-9,10-epoxy-7,8,9,10-tetrahydrobenzo[<i>a</i>]pyrene
BSF/BSM	benzene-soluble fraction/benzene-soluble matter
CAS	Chemical Abstracts Service
CI	confidence interval
CSM	cyclohexane-soluble matter
DBC	7 <i>H</i> -dibenzo[<i>c,g</i>]carbazole
DMBA	7,12-dimethylbenz[<i>a</i>]anthracene
dmm	decimillimetre
DMSO	dimethyl sulfoxide
EINECS	European Inventory of Existing Commercial Chemical Substances
ELISA	enzyme-linked immunosorbent assay
EROD	ethoxyresorufin- <i>O</i> -deethylase
FD	fluorescence detection
FID	flame ionization detection
GC	gas chromatography
GM	geometric mean
GSD	geometric standard deviation
HPLC	high-performance liquid chromatography
LOD	limit of detection
LOQ	limit of quantification
MS	mass spectrometry
NIOSH	National Institute for Occupational Safety and Health
OH-PAH	hydroxylated polycyclic aromatic hydrocarbon
OR	odds ratio
PAC	polycyclic aromatic compound
PAH	polycyclic aromatic hydrocarbon
PG	penetration grade
PI	penetration index
PEN	penetration

PMR	proportional mortality rate
ppm	parts per million
RAP	reclaimed asphalt pavement
RPM	respirable particulate matter
RR	relative risk
RT-PCR	reverse-transcription polymerase chain reaction
SIR	standardized incidence ratio
SMR	standardized mortality ratio
STV	standard tar viscometer
TPA	12- <i>O</i> -tetradecanoylphorbol 13-acetate
TOM	total organic matter
TPM	total particulate matter
TWA	time-weighted average
USERIA	ultrasensitive enzymatic radioimmunoassay
VOC	volatile organic compounds
WPT	waste plastic and tall-oil pitch
w/v	weight per volume
w/w	weight per weight