Mercury Emissions Capture Efficiency with Activated Carbon Injection at a Russian Coal-Fired Thermal Power Plant

Scientific Report

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The electronic version of the report can be found on UNEP Chemicals' website at:

http://www.unep.org/chemicalsandwaste/Mercury/PrioritiesforAction/Coalcombustion/Reports/tabid/4492/language/en-US/Default.aspx

or can be requested from:

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Acronyms and Abbreviations

AAS	Atomic absorption spectroscopy
AC	Activated carbon
ACAP	Arctic Council Action Plan
ACI	Activated carbon injection
CCR	Coal combustion residuals
CFR	United States Code of Federal Regulations
CO	Carbon monoxide
CTRL	Chronic toxicity reference level
DAF	Dilution attenuation factor
DOE	United States Department of Energy
EPRI	Electric Power Research Institute
ESP	Electrostatic precipitator
h	Hour
Hg	Mercury
Hg(0)	Elemental mercury
Hg(II)	Oxidized (+2) mercury
IOC	Zelinsky Institute of Organic Chemistry
ISTC	International Science and Technology Center (Moscow)
kg	Kilogram
kg/h	Kilogram per hour
kg/t	Kilogram per metric ton
kV	Kilovolt
L/S	Liquid-to-solid ratio
lb	Pound
lb/MMacf	Pounds (of AC) per million actual cubic feet of flue gas
LEAF	Leaching Environmental Assessment Framework
LSP	Liquid-solid partitioning
m	Meter
m/s	Meter per second
m^3	Cubic meter
m^3/h	Cubic meter per hour
mA	Milliampere
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
mg	Milligram
mg/m^3	Milligrams per cubic meter

mg/t	Milligrams per metric ton
mL/g	Milliliter per gram
MMacf	Million actual cubic feet
MSW	Municipal Solid Waste
MW	Megawatt
MW_e	Megawatt electric
ng	Nanogram
Nm^3/h	Normal cubic meter per hour
NO_X	Nitrogen oxides
NRMRL	USEPA National Risk Management Research Laboratory
NSDWR	National Secondary Drinking Water Regulations
OH	Ontario-Hydro Method
OSWER	USEPA Office of Solid Waste and Emergency Response
PAC	Powdered activated carbon
PM	Particulate matter
ppm	Parts per million
PTFE	Polytetrafluoroethylene
RfD	Reference dose
rpm	Revolutions per minute
RSD	Risk specific dose
SCR	Selective catalytic reduction
SO_2	Sulfur dioxide
TC	Total carbon
TCLP	Toxicity Characteristic Leaching Procedure
TPP	Thermal Power Plant
TT	Treatment technique
U.S.	United States
UNEP	United Nations Environment Programme
USEPA	United States Environmental Protection Agency
VI	Voltage-current
VTI	All-Russia Thermal Engineering Institute
ZIOC	Zelinsky Institute of Organic Chemistry
$\mu g/m^3$	Micrograms per cubic meter

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