List of principal abbreviations, notations and symbols

A	Surface area; cross section for air flow (general notation)
A_H	Hamaker constant
AAD	Adaptive Aerosol Delivery
ACT	Air Classifier Technology
AFM	Atomic Force Microscopy
AP	Payload of the strong bonding ('active') carrier sites
AUC	Area Under the Curve
B	Particle mobility
BAN	Breath Actuated Nebuliser
BET	Brunauer, Emmett, Teller; also notation for the specific surface area measured by nitrogen adsorption
bdp	Beclomethasone dipropionate
BSE	Bovine Spongiform Encephalopathy
C	Proportionality constant between pressure drop and flow rate through an inhaler (according to Olsson and Asking, J. Aerosol Med. 1994: 7, 201-204)
C_C	Cunningham correction factor for slip flow
C_{OPT}	Optical Concentration in the aerosol cloud during laser diffraction measurement
CC	Carrier Coverage; percent of a monolayer of drug particles around the carrier
CF	Cystic Fibrosis
CFC	Chlorofluorocarbon (propellant)
cia	Cascade impactor analysis
COPD	Chronic Obstructive Pulmonary Disease
CR	Carrier Residue; residual drug on carrier after inhalation as percent of initial carrier payload
100-CR	Percent of drug released from carrier during inhalation
100-CR-IA	Percent of real dose discharged from a classifier during inhalation
CSA	Calculated Surface Area; surface area of carrier particles based upon their mean fraction diameter, assuming that particles are spherical
CSP	Carrier Surface Payload
CSP_0	Initial Carrier Surface Payload before inhalation
d	Drug particle diameter (general notation)
D	Diameter of a jet (nozzle), airway, discharge channel or carrier particle
d_{50}	Particle diameter with 50% collection efficiency in an impactor
d_A	Aerodynamic particle diameter
$d_{A(E)}$	Calculated aerodynamic diameter (from d_E)
d_E	Equivalent sphere diameter of an irregular particle
d_{LD}	Laser diffraction diameter
d_S	Stokes' diameter
dP	Differential pressure (pressure drop across an inhaler)
dpi	Dry powder inhaler
dscg	disodium cromoglycate (cromolyn sodium)
E-280	Light extinction (at 280 nm) of a 5% aqueous lactose solution in a 10 mm cuvette
F	Force (general notation)
F_A	Adhesive force (general notation)
F_C	Centrifugal force
F_{CAP}	Capillary attraction force

F_D	Stokes' drag force of the air
F_G	Force of gravity
F_I	Inertial (separation or detachment) force
F_i	Impaction force
F_R	Removal force (general notation)
F_S	Particle stopping force
F_{VDW}	Van der Waals adhesion force
FCA	Force Control Agent; agent controlling the interactive forces between particles
FDC	Force Distribution Concept
$FEV_1(\%)$`	Forced Expiratory Volume in 1 s (as percent of predicted)
FIR	Flow Increase Rate
fpf	Fine particle fraction; fraction of particles (as percent of real, nominal or delivered dose) generally smaller than 5 μm. In this thesis fpf is expressed as percent of real dose, or of nominal dose when the real dose was unknown
g	Acceleration of gravity
gmd	Geometric mean (particle) diameter
GSD	Geometric Standard Deviation
H	Mean depth of carrier surface discontinuities
HFA	Hydrofluoroalkane (propellant)
HMF	Hydroxy Methyl Furfural
HPLC	High Pressure Liquid Chromatography
IA	Inhaler Accumulation; amount of drug lost in the inhaler as percent of the real dose
k	Drug release rate constant
$k_{0.5}$	Average drug release rate constant in the first 0.5 s of inhalation
l_N	Liter (normal) at atmospheric pressure and 273 °K (0 °C)
lda	Laser diffraction analysis
m	Particle mass
mdi	Metered dose inhaler
MIP	Maximal Inspiratory Pressure
mmad	Mass median aerodynamic diameter
mmd	Mass median diameter
MSLI	Multi Stage Liquid Impinger
n	Number (of particles, molecules, atoms or airway ducts)
NGI	Next Generation Impactor
PEF(R)	Peak Expiratory Flow (Rate)
PIF(R)	Peak Inspiratory Flow (Rate)
P-MIP	Peak Maximal Inspiratory Pressure
ppm	parts per million
q	Amount of particle charge
R	Air flow resistance
R	Radius of an airway duct, classifier chamber, discharge channel or impactor nozzle
r	Drug particle radius
r_C	Complex (or harmonic) radius of two contacting particles
Re	Reynolds number
RH	Relative humidity
rpm	Revolutions per minute
RSD	Relative Standard Deviation; standard deviation as percent of mean
S	Particle stopping distance (inertial range)

S_g	Specific surface area
SARS	Severe Acute Respiratory Syndrome
SEM	Scanning Electron Microscope
SRI	Surface Roughness Index; ratio of BET surface area to CSA surface area
Stk	Stokes number governing collection efficiency in a jet impactor
Stk_{50}	Stokes number with 50% collection efficiency
t	(Inhalation) time
tof	Time of flight
U	Velocity (general notation)
U_0	Initial particle velocity
U_{NOZZLE}	Air or particle velocity in an impactor nozzle
U_{PA}	Particle velocity relative to the air velocity
U_T	Tangential velocity (in a classifier or in a bent airway duct)
U_{TS}	Terminal settling velocity of a particle in still air
V	Drug particle volume
V_{CSD}	Volume of carrier surface discontinuities
vmd	Volume median diameter
W	Drug particle weight
x	Distance between two contacting surfaces
X	Fraction of the carrier diameter determining the mean depth of carrier surface discontinuities
X_{50}	Volume median diameter obtained with laser diffraction technique (definition according to ISO-13320-1)
X_X	Laser diffraction diameter corresponding with X volume percent in the cumulative volume distribution curve as function of the diameter; frequently used values for X are 10, 25, 90, 99 and 100 (%)
Y	Fraction of the carrier surface area over which surface discontinuities exist
γ	Surface tension of a liquid
ε	Powder (particle) porosity
η	Viscosity (of the air)
θ	Contact angle between a liquid and a solid
ρ_P	True particle density
ρ_S	Apparent particle density
τ	Particle relaxation time
Φ	(Inspiratory) flow rate
χ	Dynamic shape factor
ϖ	Lifshitz constant (in particle interaction)

HELOS, MAGIC and RODOS are device names (no abbreviations).
In conformance with most literature, specific surface areas (CSA, BET) are given in $m^2.g^{-1}$; flow rates (Φ; PIF, PEF) in $l_N.min^{-1}$ and drug particle diameters in µm, unless indicated otherwise in the text. The use of upper and lower case has also been adapted from literature.

Not in conformance with literature is the presentation of carrier surface payloads (CSP) in $g.m^{-2}$; pressure drops (dP, MIP) in kPa and air flow resistances (R) in $kPa^{0.5}.min.l_N^{-1}$.