

Task Group 3 Charge

MWCNT Potential Exposure/Release Scenario

The charge for Task Group 3 is to identify various potential release scenarios of the greatest likelihood of exposure potential (high, medium, low) for MWCNT at the various stages throughout the lifecycle of the product and article. Approaches include descriptions of various potential release/exposure scenarios

The potential release scenarios to be examined begin with formation of the solid product (master batch) and move through its lifecycle as a product and article, ending with the article's end of life. The lifecycle may roughly be broken into three stages: manufacturing of MWCNT/matrix and the ultimate product made from/with the MWCNT/matrix; normal/consumer/commercial use of product throughout bulk of lifecycle; and end of life/disposal issues. Examples of such stages include:

Manufacturing

- Product formation of MWCNT/matrix
- Production process manufacturing/fabricating the article containing MWCNT/matrix for commercial sale

Product life/usage

- Expected normal/routine uses of the article in commerce
- Any anticipated but unintended uses of the article where release might occur
- Weathering/degradation
- Repair/refurbishing/maintenance/mechanical alteration of the article

End of life

- Weathering/degradation
- Repair/refurbishing/mechanical alteration of the article
- Disposal/demolition/reuse/resale of used article (garage sale, landfill, incineration, sewage treatment, recycled)

The characterization of release and exposure scenarios will take into account:

- Site of potential release and exposure; for manufacturing, this includes workplace exposure and environmental release associated with the manufacturing process; for product life/usage, this includes general population/consumers and workplace exposures; and for end of life/disposal, this includes environment and workplace exposures
- Populations potentially exposed – for manufacture, workers; for product life/usage general public (if product is in a public building/space) or specific consumers (who buy the product), susceptible populations (for example, infants or elderly taken care of at home or at an institution that uses the MWCNT/matrix product) and workers

- Form of the release – native MWCNT's, MWCNT/matrix combination
- Magnitude of release/exposure (H, M, L)
- Frequency/duration of release/exposure (H, M, L)