Type	Document Name (optional)	
Safety Data Sheet	580-08501 Soil Kit Standard containing Only Silica as hazardous substance.	January 13, 2014

Safety Data Sheet

Section 1: Product and Company Identification

Product Identifier

Product Name and Part Numbers: These soil samples are part of soil sample kit 580-08501

180-707	NCS DC 93007 Gold Ore
180-708	NCS DC86036 Multi-metal Ore
180-709	NCS DC28041 Manganese Ore
180-712	ECRM 651-1 Iron Ore Powder
180-713	GBW07212 Phosphate Rock
180-715	USZ 44-2007 Rare Earth Powder
180-716	OREAS 504 Copper Powder
180-717	GBAP-12 Bauxite Powder
180-718	SARM 41 Shale Powder
180-719	BCS 512 Dolomite Powder
180-722	US SGR-1b Shale Powder
180-723	VS-8550-4 Black Shale Powder

These soil standards consist of 10g of various soils or pure silicon dioxide. The standards consist of a three part sample cup consisting of two rings and a cap. The bottom ring and top cap snap into the middle ring. Inserted between the bottom and middle ring is a sheet of Mylar which allows X-rays to penetrate the soil sample. On top of the mylar sheet within the middle ring is the soil/silica material covered in the Safety Data Sheet. After filling, the top cap is placed on the cover. Per normal and proper use of these standards in XRF calibration, there should be minute to no exposure to the materials within this soil cup.

Manufacturer/Supplier:

Thermo Scientific Portable Analytical Instruments
2 Radcliff Road
Tewksbury, MA 01876
Phone: +1 978-670-7460
Fax: +1 978-670-7430
www.thermoscientific.com/pai

Section 2: Hazard Identification

Classification of the substance or mixture:

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Carcinogenicity (Category 1B) H351
Specific target organ toxicity – repeated exposure, Inhalation (Category 2), H373

GHS label elements, including precautionary statements

Pictogram

Signal Word DANGER

Hazard Statement(s)

H351	Suspected of Causing Cancer
H373	May cause damage to organs through prolonged or repeated exposure if inhaled

Precautionary Statement(s)

P201	Obtain special instructions before use
P202	Do not handle until all safety precautions have been read and understood
P260	Do not breathe/dust/fume/gas/mist/vapours/spray
P281	Use personal protective equipment as required
P308+P313	IF exposed or concerned: Get medical advice/attention
P405	Store locked up
P501	Dispose of contents/container to an approved waste disposal plant

Section 3: Composition/Information on Ingredients

Substances: Soil Calibration Standards Containing Silicon Dioxide

Synonyms : Silica/ Quartz/ Sand/ Cristobalite/ Soil

Formula : O_2Si Molecular Weight : 60.08 g/mol

CAS-No. : 14808-60-7

EC-No. : 238-878-4

Hazardous Components

Component	***Classification***	***Concentration***
Silicon Dioxide	Carc.2 STOT RE 2; H351, H373	0.3-71.38%

These soils samples may contain less than 0.1% of various compounds of Lead, Arsenic, Selenium, Chromium, and other heavy metals. Please consult the appropriate certification statement of the materials, when disposing these soil standards as waste.

Section 4: First Aid Measures

Inhalation: Bring exposed personnel to fresh air and seek medic

Skin Contact: Immediately wash with water and soap and rinse thoroughly. Seek medical advice if irritation occurs.

After eye contact: Rinse opened eye for fifteen minutes under running water or eyewash. Seek medical advice

After ingestion: Seek medical treatment if adverse effects occur

Section 5: Fire Fighting Measures

Extinguishing Media

Suitable Extinguishing Agents : Dry Chemical, Carbon Dioxide

Special Hazards during fire

If this product is involved in a fire the following can be release:
Silicon Dioxide

Advice for Firefighters

Protective Equipment: Wear SCBA respirator and fully protective impervious suit.

Section 6: Accidental Release Measures

Personal Precautions, Protective Equipment, and Emergency Procedures

Wear protective equipment while cleaning.

Do not sweep material. Use wet cleaning methods or HEPA filtered vacuum. Dispose spilled material and contaminated clean-up material per local regulations.

Section 7: Handling and Storage

Handling:

Keep container tightly sealed
Store in cool, dry place in tightly closed containers
Ensure good ventilation in the workplace
Open and handle container with care

Storage:

Keep container tightly sealed
Store in cool dry place with container orientated upright.

Section 8: Exposure Controls / Personal Protection

Ingredients with workplace control parameters:

Components	OSHA PEL	NIOSH REL	ACGIH TLV
Silicon oxide 14808-60-7	See Quartz listing	0.05 mg/m^3 (respirable dust)	0.025 mg/m^3 (respirable fraction)

Exposure Controls:

Personal Protective Equipment and Protective Measures

Though not required for normal use of soil standards, protective equipment such as eye protection, gloves, and protective clothing should be worn while cleaning up any spilled material.

The usual precautionary measures for handling chemicals should be followed. Keep away from foodstuffs, beverages and feed. Remove all soiled and contaminated clothing immediately Wash hands before breaks and at the end of work.

Section 9: Physical and Chemical Properties

Form:	Powder, granules, soil	**Color:**	White to pale brown
Odor:	None	**Odor Threshold:**	N/A
Freezing Point:	N/A	**Melting Point:**	1702 ^{o}C/3096 ^{o}F (SiO_2)
Boiling Point:	1880 ^{o}C/3420 ^{o}F (SiO_2)	**Flashpoint:**	N/A
Evaporation Rate:	N/A	**Flammability:**	Non-Flammable
Explosive Limits:	None	**Vapor Pressure:**	N/A
Vapor Density:	N/A	**Relative Density:**	2.13 g/cm^3 (SiO_2)
Solubility:	Insoluble in water (SiO_2)	**Partition Coefficient: (n-octanol/water):**	N/A
Autoignition Temperature:	N/A	**Decomposition Temperature:**	N/A
Viscosity	N/A		

Section 10: Stability and Reactivity

Reactivity: Stable at normal temperature and pressure

Chemical Stability: Stable at normal temperatures and pressures

Conditions to be avoided: None if used and stored according to specifications

Possibility of hazardous reactions: No Dangerous Reactions known

Incompatible materials: Fluorine, Oxygen difluoride, Chlorine trifluoride and all acids

Hazardous Decomposition products: Silicon oxide and oxides of carbon, nitrogen and sulfur

Section 11: Toxicological Information

Information on toxicological effects

Acute toxicity

Oral: data available

Inhalation: no data available

Dermal: no data available

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity

Limited evidence of carcinogenicity in human studies

IARC: 1 - Group 1: Carcinogenic to humans (as Quartz)

ACGIH: No component of this product is present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: Known to be human carcinogen (Quartz)

Reproductive toxicity: no data available

Specific target organ toxicity - single exposure: no data available

Specific target organ toxicity - repeated exposure:

Inhalation - May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard: no data available

Additional Information: RTECS: VV7330000

Prolonged inhalation of crystalline silica may result in silicosis, a disabling pulmonary fibrosis characterized by fibrotic changes and miliary nodules in the lungs, a dry cough, shortness of breath, emphysema, decreased chest expansion, and increased susceptibility to tuberculosis. In advanced stages, loss of appetite, pleuritic pain, and total incapacity to work. Advanced silicosis may result in death due to cardiac failure or destruction of lung tissue. Crystalline silica is classified as group 1 "known to be carcinogenic to humans" by IARC and "sufficient evidence" of carcinogenicity by the NTP., The chronic health risks are associated with respirable particles of 3-4 um over protracted periods of time. Currently, there is a limited understanding of the mechanisms of quartz toxicity, including its mechanisms for lung carcinogenicity. Additional studies are needed to determine whether the cell transforming activity of quartz is related to its

carcinogenic potential.

Section 12: Ecological Information

Toxicity: no data available

Persistence and degradability: no data available

Bioaccumulative potential :no data available

Mobility in soil: no data available

Results of PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects: no data available

Section 13: Disposal Considerations

Waste treatment methods

Product: Offer surplus and non-recyclable solutions to a licensed waste disposal company.

Contaminated packaging: Dispose of as unused product.

Section 14: Transport Information

DOT (US): Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

Section 15: Regulatory Information

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards: Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No	Revision Date
Quartz	14808-60-7	4/1/1994

Pennsylvania Right To Know Components

	CAS-No	Revision Date
Quartz	14808-60-7	4/1/1994

New Jersey Right To Know Components

	CAS-No	Revision Date
Quartz	14808-60-7	4/1/1994

California Prop.65 Components

	CAS-No	Revision Date
WARNING! This product contains a chemical known in the state of California to cause Cancer. (Quartz)	14808-60-7	4/1/1994

Section 16: Product and Company Identification

HMIS Rating

Health hazard: 0

Chronic Health Hazard: *

Flammability: 0

Physical Hazard 0

NFPA Rating

Health hazard: 0

Fire Hazard: 0

Reactivity Hazard: 0

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Thermo Fisher Scientific and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.