

SAFETY DATA SHEET

CARBON BLACK

EFFECTIVE DATE: 25 JAN 2024

Doc. No: CLP/TCH/SDS/M72 REV 04

1. IDENTIFICATIONS OF THE CHEMICAL PRODUCT AND THE COMPANY UNDERTAKING

Product Name : CARBON BLACK

*This SDS is valid for the following grades
#25, #40, #2650, #45L, #85L, #95L, MA11, MA14, MA100 & MA555.*

Recommended Use : Raw material for industrial and professional use in coatings and polymers; also pigment for inks and other coatings

Uses advised against : Use as pigment for human tattoos

Company Identifications : CLP International Pte Ltd
No. 2, Tanjong Penjuru
Singapore 609017
Tel: +65 6265 2788
Fax: +65 6265 7501

2. HAZARDS IDENTIFICATION

GHS Classification:
Not classified as a hazardous substance

GHS Label Elements:
Not applicable

Other Hazards:
Carbon black is mainly elemental carbon: it cannot be degraded by biological or abiotic processes. It is concluded not to be a PBT or vPvB substance.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/ Mixture : Substance

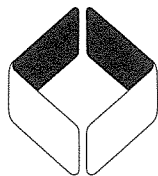
Substance name	CAS No	EC No.	Concentration (wt %)
Carbon Black	1333-86-4	215-609-9	100

4. FIRST AID MEASURES

General comments : The substance is of low acute toxicity and not irritating. No special hazards associated with accidental exposure have been identified.

Inhalation : Remove affected persons into fresh air. If necessary, restore normal breathing through standard first aid measures and seek medical attention.

Skin contact : Remove any contaminated clothing and wash contaminated skin thoroughly with soap and water. If redness or soreness occurs and persists, seek medical attention.



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Eye Contact : Flush the eyes with sterile saline eyewash or clean water for at least 15 minutes, including under the upper and lower eyelids. If irritation occurs and persists, seek medical attention.

Ingestion : Assist patient to wash out mouth and give water to drink (unless unconscious). Seek medical attention if symptoms occur

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media : Carbon dioxide, dry chemical powder or fine water spray. For larger fires, use fine water spray or alcohol-resistant foam.

Unsuitable Extinguishing Media : Do not direct solid water stream so as to spread fire. Burning powder may float on water surface.

Specific hazards arising from the chemical : Burning may not be obvious and combusted material may continue to smoulder for long periods. Formation of carbon oxides, including carbon monoxide, is possible due to heat or fire.

Special protective equipment and precautions for firefighters : Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Dust explosion hazard is possible if dust is generated.

6. ACCIDENTAL RELEASE MEASURES

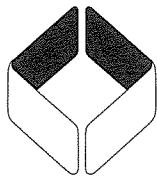
Personal precautions, protective equipment and emergency procedures : Restrict access to area of release and contain the spillage or leak source, provided it is safe to do so. Apply all appropriate protective measures identified in sections 7 and 8.

Environmental precautions : Isolate released material to prevent further spread: contain and recover so as to avoid release to surface water or drains. Disposal of recovered material: see section 13.

Methods and materials for containment and cleaning up : Use water spray to damp down dry spillage. Recover spilled material using vacuum or wet mopping to avoid dust generation. Prevent entry into drainage systems and surface waters.

7. HANDLING AND STORAGE

Safe handling advice : Prevent dust generation – ensure good workplace ventilation with exhaust extraction. Follow good practice for industrial hygiene (see section 8). Keep away from flame or other ignition sources.



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Requirements for storage : Store in securely closed containers, in a cool and dry place away from foodstuffs or oxidising agents.

Specific end uses : For industrial use. Where dust generation is possible, provide local exhaust ventilation.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational Exposure Limits

Substance	OEL source and type	Value	Remarks
Carbon Black	8h TWA: UK EH40	3.5 mg/m ³	Workplace Exposure Limits
	15 min STEL: UK EH40 7	7 mg/m ³	

PNECs and DNELs

DNEL value for systemic effects (chronic bronchitis) following long-term human exposure: 2 mg/m³ (inhalable dust fraction).

No adverse environmental effects of carbon black have been identified: hence no PNEC values have been determined.

Appropriate engineering controls:

Use workplace exhaust ventilation to limit atmospheric dust concentrations.

Personal Protective Equipment (PPE):

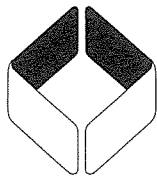
- Respiratory protection : Use dust mask (e.g. half-face filter mask, EN140 or EN149) or respirator with dust filter cartridges (e.g. EN405 half-face respirator or EN136 full-face respirator)
- Hand protection : Use impermeable gloves (e.g. EN374)
- Eye protection : Use goggles/glasses with side shield (e.g. EN166)
- Skin and body protection : Wear suitable protective clothing (e.g. EN368 chemical protection suit)
- Hygiene measures : Do not eat, drink or smoke in work areas.
Remove any contaminated clothing and wash hands after work sessions.

Environmental exposure controls

Process emissions should be controlled to comply with all applicable local and national discharge limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Black powder or granules
- Odor : Odourless (Do not attempt to smell this material)
- Flash Point (°C) : No determined
- Lower explosion limit (% volume in air) : 50 g/m³
- Auto-ignition temperature (°C) : >300°C



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Oxidizing properties	: Not considered oxidizing
Explosivity	: Not considered explosive (but possible dust explosion hazard)
Melting Point/Range (°C)	: > 3000°C (sublimes)
Boiling Point/Range (°C)	: Sublimes above 3000°C
Density (g/cm ³)	: 1.7 – 1.9 at 20°C (settled apparent density 20 – 200 kg/m ³ at 20°C)
Solubility (Water)	: Not determined – essentially insoluble
Partition coefficient: n-octanol/water (Log Kow)	: Not determined (inorganic)
Vapour pressure	: Not determined

10. STABILITY AND REACTIVITY

Reactivity	: Stable under recommended storage conditions
Chemical Stability	: Stable under normal storage and handling conditions
Possibility of Hazardous Reactions	: Not expected to occur
Conditions to Avoid	: Use low-dust transfer techniques
Incompatible Materials	: Keep away from oxidising agents.
Hazardous Decomposition Products	: None known

11. TOXICOLOGICAL INFORMATION

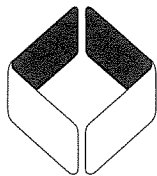
Information on toxicological effects

Acute Toxicity

Inhalation	: NOAEL (Rat) – 4.6 mg/m ³ , 4 Hours
Oral	: LD50 (Rat) - >5000 mg/kg
Dermal	: No significant absorption is expected following skin contact

Serious eye damage/ irritation	: Not irritating to rabbit eyes. (Minor mechanical irritation and/or discolouration of the eye is possible)
Skin corrosion/ irritation	: Not irritating to rabbit skin
Respiratory or skin sensitization	: Not sensitising (no delayed contact sensitisation in a Guinea pig test - Buehler method)
Germ cell mutagenicity	: Carbon black gave negative results in bacterial mutation (Ames) tests: solvent extracts from various carbon blacks gave differing (positive and negative) results in this bacterial test system, probably due to differing levels of extractable polycyclic aromatics (PAHs) in the tested samples. Carbon black did not induce mutation in an L5178Y mammalian cell mutation assay, sister chromatic exchange in CHO cells.

In vivo, inhalation exposure of rats at carbon black levels causing lung inflammation was associated with increased hprt mutation in alveolar



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epithelial cells, but PAH-DNA adducts were not detected in the lungs of rats exposed by inhalation at up to 50 mg/m³ for 13 weeks. No genetic damage was detected in a fruit fly (*D. melanogaster*) test.

It is therefore considered that carbon black is not directly genotoxic but may produce localised conditions of oxidative stress due to lung overload, triggering mutation.

Carcinogenicity

: Long-term inhalation exposure of rats to high levels of respirable carbon black significantly increased lung tumour incidence (most evidently in females): this was not seen in mice. This rat effect is believed to arise from inflammatory reaction to lung overload. No causal association between human carbon black exposure and carcinogenicity has been established.

IARC have concluded there is inadequate evidence for human carcinogenicity (classification 2B: possibly carcinogenic to humans).

Reproductive toxicity

: Significant penetration of carbon black to the reproductive organs is not expected following exposure by any route.

Developmental toxicity studies with diesel exhaust particulates (higher in extractable organics than carbon black) found no significant teratogenic or foetotoxic effect in rats or rabbits.

Carbon black is not expected to adversely affect reproduction or foetal development.

Specific target organ toxicity – single exposure

: Acute toxicity is low.

Specific target organ toxicity – repeated exposure

: Epidemiologic studies of workers in the carbon black producing industry in the U.S. and in Western Europe show no significant adverse health effect due to occupational exposure to carbon black. Sub-chronic NOAEL for inflammatory response in the female rat lung (sensitive indicator of carbon black effect) = 1 mg/m³ (respirable); this effect, related to lung overload is of questionable relevance to man.

Aspiration Hazard

: Not applicable: substance is a solid.

Further Information

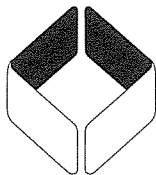
: Long-term oral (feeding) toxicity studies in mice and rats, and a long-term dermal toxicity study in mice, found no adverse effects (dosages up to 2.05 g/kg or 10% in diet or 20% suspension on skin).

12. ECOLOGICAL INFORMATION

Toxicity:

Toxicity to fish

: Acute – 96 hours LC₅₀ >5000 mg/l (aqueous suspension) and LC₅₀ >10000 mg/l (loading rate, water-accommodated filtrate)



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Toxicity to fish	:	Long term – Not determined
Toxicity to Daphnia and/or other aquatic invertebrates	:	Acute - Daphnia magna 24h NOEC 3200 mg/l, EC50 >5600 mg/l (loading rate, water-accommodated filtrate: effects probably pH-related) Long term – Not determined
Toxicity to algae	:	EC50 >10,000 mg/l (loading rate, water-accommodated filtrate)
Toxicity to bacteria	:	Toxicity to sewage treatment microbes is not expected (EC50 for dehydrogenase activity in activated sludge >800 mg/l)
Persistence/degradability:		
Biodegradability	:	Carbon black is mainly elemental carbon: it cannot be degraded by biological or abiotic processes
Bio accumulative potential:		
Bioaccumulation	:	Not expected to bioaccumulate: carbon is ubiquitous in living organisms
Mobility in Soil:		
Mobility	:	Expected to be low, due to water insolubility
Distribution among environmental compartments	:	Deposition in soil and sediments is likely. Carbon is widely distributed in nature.
Results of PBT and vPvB assessment:		
Not considered to be PBT or vPvB		
Other adverse effects		
Not a water-polluting substance according to the German system of water hazard classification (WGK).		

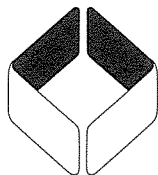
13. DISPOSAL CONSIDERATIONS

Waste treatment method

May be burned in appropriately equipped incinerators or disposed of in a suitable landfill, subject to compliance with all applicable national and local regulations.

14. TRANSPORT INFORMATION

IATA	:	Not regulated.
IMDG	:	Not regulated.
RID	:	Not regulated.
ADR	:	Not regulated.



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15. REGULATORY INFORMATION

Applicable National Regulations:

- 1) Standards on Hazard communication for hazardous chemicals and dangerous goods
 - SS 586: Part 1: 2014-Transport and storage of dangerous goods
 - SS 586: Part 2: 2014-GHS of classification and labelling of chemicals
 - SS 586: Part 3: 2008(2014)-Preparation of safety data sheet
- 2) MOM: Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations
 - This product is subject to SDS, labelling, PEL and other requirements in the Acts/Regulations
- 3) NEA: Environmental Protection and Management Act & Environmental Protection and Management (Hazardous Substances) Regulations
 - This product is not subject to control under this Acts/Regulations
- 4) SCDF: Fire Safety Act & Fire Safety (Petroleum and Flammable Materials) Regulations
 - This product is not subject to the requirement of this Acts/Regulations

16. OTHER INFORMATION

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.