Mineral Makeup Ingredients
Unit 4 Landmark House,
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BA6 9FR, UK
Tel: +44 (0)1458 851216
Web: www.mineralmakeupingredients.co.uk

MATERIAL SAFETY DATA SHEET

1. Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
  - **Trade Name :** Titanium Dioxide
  - **Article Number :** TIT.F31BHP.25
  - **CAS Number :** 13463-67-7
  - **EC Number :** 236-675-5
  - **Registration No.** 01-2119489379-17-0068
  - **Supplier:** Mineral Makeup Ingredients
- **Relevant identified uses of the substance or mixture and uses advised against**
- **Sector of use**

SU1	Agriculture, forestry, fishery
SU2a	Mining (without offshore industries)
SU2b	Offshore industries
SU3	Industrial uses: Uses of substances as such or in preparations at industrial sites
SU4	Manufacture of food products
SU5	Manufacture of textiles, leather, fur
SU6a	Manufacture of wood and wood products
SU6b	Manufacture of pulp, paper and paper products
SU7	Printing and reproduction of recorded media
SU8	Manufacture of bulk, large scale chemicals (including petroleum products)
SU9	Manufacture of fine chemicals
SU10	Formulation of preparations and/or re-packaging (excluding alloys)
SU11	Manufacture of rubber products
SU12	Manufacture of plastics products, including compounding and conversion
SU13	Manufacture of other non-metallic mineral products, e.g. plasters, cement
SU14	Manufacture of basic metals, including alloys
SU15	Manufacture of fabricated metal products, except machinery and equipment
SU16	Manufacture of computer, electronic and optical products, electrical equipment
SU17	General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment
SU18	Manufacture of furniture
SU19	Building and construction work
SU20	Health services
SU21	Consumer uses: Private households / general public / consumers
SU22	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
SU23	Electricity, steam, gas water supply and sewage treatment
SU24	Scientific research and development

- **Product category**

PC1	Adhesives, sealants
PC2	Adsorbents
PC3	Air care products
PC4	Anti-Freeze and de-icing products
PC5	Artists supply and hobby preparations
PC6	Automotive care products
PC7	Base metals and alloys

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PC8	Biocidal products (e.g. Disinfectants, pest control)
PC9a	Coatings and paints, thinners, paint removers
PC9b	Fillers, putties, plasters, modelling clay
PC9c	Finger paints
PC10	Buildings and construction preparations
PC11	Explosives
PC12	Fertilizers
PC13	Fuels
PC14	Metal surface treatment products, including galvanic and electroplating products
PC15	Non-metal surface treatment products
PC16	Heat transfer fluids
PC17	Hydraulic fluids
PC18	Inks and toners
PC19	Intermediate
PC20	Products such as ph.-regulators, flocculants, precipitants, neutralization agents
PC21	Laboratory chemicals
PC23	Leather tanning, dye, finishing, impregnation and care products
PC24	Lubricants, grease, release products
PC25	Metal working fluids
PC26	Paper and board dye, finishing and impregnation products; including bleaches and other processing aids
PC27	Plant protection products
PC28	Perfumes, fragrances
PC29	Pharmaceuticals
PC30	Photo-chemicals
PC31	Polishes and wax blends
PC32	Polymer preparations and compounds
PC33	Semiconductors
PC34	Textile dyes, finishing and impregnation products; including bleaches and other processing aids
PC35	Washing and cleaning products (including solvent based products)
PC36	Water softeners
PC37	Water treatment chemicals
PC38	Welding and soldering products (with flux coatings or flux cores), flux products
PC39	Cosmetics, personal care products
PC40	Extraction agents

- **Process category**

PROC1 Use in closed process, no likelihood of exposure
PROC2 Use in closed, continuous process with occasional controlled exposure
PROC3 Use in closed batch process (synthesis or formulation)
PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
PROC6 Calendering operations
PROC7 Industrial spraying
PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

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PROC10 Roller application or brushing
PROC11 Non industrial spraying
PROC12 Use of blowing agents in manufacture of foam
PROC13 Treatment of articles by dipping and pouring
PROC14 Production of preparations or articles by tabletting, compression, extrusion, pelletisation
PROC15 Use as laboratory reagent
PROC16 Using material as fuel sources, limited exposure to unburned product to be expected
PROC17 Lubrication at high energy conditions and in partly open process
PROC18 Greasing at high energy conditions
PROC19 Hand-mixing with intimate contact and only PPE available
PROC20 Heat and pressure transfer fluids in dispersive, professional use but closed systems
PROC21 Low energy manipulation of substances bound in materials and/or articles
PROC22 Potentially closed processing operations with minerals/metals at elevated temperature – Industrial setting
PROC23 Open processing and transfer operations with minerals/metals at elevated temperature
PROC24 High (mechanical) energy work-up of substances bound in materials and/or articles
PROC25 Other hot work operations with metals
PROC26 Handling of solid inorganic substances at ambient temperature
PROC27a Production of metal powders (hot processes)
PROC27b Production of metal powders (wet processes)
PROC 0 : The substance is widely used

- **Environmental release category**

ERC1 Manufacture of substances
ERC2 Formulation of preparations
ERC3 Formulation in materials
ERC4 Industrial use of processing aids in processes and products, not becoming part of articles
ERC5 Industrial use resulting in inclusion into or onto a matrix
ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)
ERC6b Industrial use of reactive processing aids
ERC6c Industrial use of monomers for manufacture of thermo-plastics
ERC6d Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers
ERC7 Industrial use of substances in closed systems
ERC8a Wide dispersive indoor use of processing aids in open systems
ERC8b Wide dispersive indoor use of reactive substances in open systems
ERC8c Wide dispersive indoor use resulting in inclusion into or onto a matrix
ERC8d Wide dispersive outdoor use of processing aids in open systems
ERC8e Wide dispersive outdoor use of reactive substances in open systems
ERC8f Wide dispersive outdoor use resulting in inclusion into or onto a matrix
ERC9a Wide dispersive indoor use of substances in closed systems
ERC9b Wide dispersive outdoor use of substances in closed systems
ERC10a Wide dispersive outdoor use of long-life articles and materials with low release
ERC10b Wide dispersive outdoor use of long-life articles and materials with high or intended release (including abrasive processing)
ERC11a Wide dispersive indoor use of long-life articles and materials with low release
ERC11b Wide dispersive indoor use of long-life articles and materials with high or intended release (including abrasive processing)
ERC12a Industrial processing of articles with abrasive techniques (low release)
ERC12b Industrial processing of articles with abrasive techniques (high release)
ERC 0 : The substance is widely used

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- **Article category**
  - AC1 Vehicles
  - AC2 Machinery, mechanical appliances, electrical/electronic articles
  - AC3 Electrical batteries and accumulators
  - AC4 Stone, plaster, cement, glass and ceramic articles
  - AC5 Fabrics, textiles and apparel
  - AC6 Leather articles
  - AC7 Metal articles
  - AC8 Paper articles
  - AC10 Rubber articles
  - AC11 Wood articles
  - AC13 Plastic articles
  - AC30 Other articles with intended release of substances
  - AC31 Scented clothes
  - AC32 Scented eraser
  - AC34 Scented Toys
  - AC35 Scented paper articles
  - AC36 Scented CD
  - AC38 Packaging material for metal parts, releasing grease/corrosion inhibitors

- **Use of the product:** Pigment

2. Hazards Identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
  - The substance is not classified according to the CLP registration
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC:** *Not applicable.*
- **Information concerning particular hazards for human and environment:**
  - The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Classification system**
  - The classification is in line with current EC lists. It is extended, by information from technical literature and company information.
- **Label elements**
- **Labelling according to Regulation (EC) No 1272/2008:** *Void*
- **Hazard pictograms:** *Void*

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- **Signal word:** *Void*
- **Hazard statements:** *Void*
- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** *Not applicable*
- **vPvB:** *Not applicable*

3. Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**
  13463-67-7 titanium dioxide
- **Identification number(s)**
  EC number: 236-675-5

4. First aid measures

- **Description of first aid measures**
- **General information:** Take affected persons out into fresh air
- **After inhalation:** Supply fresh air; consult doctor in case of complaints
- **After skin contact:** Generally, the product does not irritate the skin
- **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Rinse out mouth and then drink plenty of water. If symptoms persist, consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed:** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

5. Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
  Not flammable/ Use appropriate extinguishing media for the combustible material involved in the fire.
- **Special hazards arising from the substance or mixture:** Product is inert, non-flammable, non-combustible.
- **Advice for firefighters**
- **Protective equipment:**
  Firefighters should use self-contained breathing apparatus.
  Wear fully protective suit.
- **Additional information**
  Collect contaminated fire fighting water separately. It must not enter the sewage system. Dispose of fire debris and contaminated fire fighting water in according with official regulations.

6. Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  Avoid formation of dust
  Ensure adequate ventilation

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- **Environmental precautions:**
  Prevent seepage into sewage system, workpits and cellars.
  Even at low concentration, the product renders the discharge in liquid effluent highly visible.
- **Methods and material for containment and cleaning up:**
  Vacuum, sweep, shovel or use wet clean-up techniques and place waste in a closed container.
  Dispose contaminated material as waste according to item 13.
  Move containers from spill area.
  Stop leak if without risk.
  Product can cause slippery conditions if wet.
- **Reference to other sections**
  No dangerous substances are released.
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protective equipment
  See Section 13 for disposal information

7. Handling and storage

- **Handling:**
- **Precautions for safe handling**
  Prevent formation of dust.
  Provide suction extractors if dust is formed.
  Ensure good ventilation/exhaustion at the workplace.
- **Information about fire – and explosion protection:**
  Product is not flammable.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
  Pigments should not be stored in outside areas exposed to the weather.
- **Information about storage in one common storage facility:** Not required
- **Further information from storage conditions:** Cool dry conditions in well sealed receptacles.
- **Specific end use(s):** No further relevant information available.

8. Exposure controls/personal protection

- **Additional information about design of technical facilities:**
  Mechanical ventilation may be required to maintain exposure levels below limits.
- **Control parameters**
- **Long-term exposure – systemic effects in workers:**
- **Inhalation DN(M)EL:** 10mg/m^3
- **PNECs**
- **PNEC aqua (freshwater):** 0.127 mg/lit
- **PNEC aqua (marine water):** 1 mg/lit
- **PNEC aqua (intermittent releases):** 0.61 mg/lit
- **PNEC STP:** 100 mg/lit
- **PNEC sediment (freshwater):** 1000 mg/kg dw
- **PNEC sediment (marine water):** 100 mg/kg dw
- **PNEC soil:** 100 mg/kg dw
- **PNEC oral (secondary poisoning):** 1667 mg/kg food

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- **Additional information:** The lists valid during the making were used as a basis.

- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**

  The usual precautionary measures at to be adhered to when handling chemicals.
  Do not eat, drink, smoke, or sniff while working.
  Wash hands before breaks and at the end of work.
  Wash contaminated clothing before reusing.
- **Respiratory protection:**

  Dust safety masks are recommended when the dust concentration is more than 10mg/m^3.
- **Protection of hands:**

  Protective gloves.
  Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.
- **Material of gloves:** No special glove composition is required.
- **Penetration time of glove material:**

  The extract break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Safety glasses with side-shields.
- **Body protection:** Protective work clothing.

9. Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**
- **Form:** Powder
- **Colour:** White
- **Odour:** Odourless
- **pH-value (100 g/l) at 25 °C (77 °F):** 7.0 - 8.0 (ISO 787 part IX)
- **Change in condition**
- **Melting point/Melting range:** 1800 ºC
- **Boiling point/Boiling range:** Undetermined.
- **Flash point:** Not applicable.
- **Flammability (solid, gaseous):** Product is not flammable.
- **Self-igniting:** Product is not self igniting.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Oxidizing properties** No oxidising properties
- **Specific gravity at 20 °C (68 °F):** 4.04 g/cm^3 (33.714 lbs/gal) (ISO 787 part X)
- **Bulk density at 20 °C (68 °F):** 500 - 750 kg/m^3
- **Solubility in / Miscibility with water at 20 °C (68 °F):** < 0.0001 g/l
- **Solvent content:**
- **Titanium content (as TiO2) :** > 99 %
- **Heating loss at 105ºC :** < 0.5 % (ISO 787 part II)
- **Other information** No further relevant information available.

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10. Stability and reactivity

- **Reactivity**
- **Chemical stability:** Stable under normal ambient conditions.
- **Thermal decomposition / conditions to be avoided:**
  No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** No further relevant information available.
- **Incompatible materials:** No dangerous decomposition products known.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11. Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

• **LD/LC50 values relevant for classification:**		
• **13463-67-7 titanium dioxide**		
Oral	LD50 Repeated Dose Oral Toxicity (NOAEL)	> 5000 mg/kg (rat) (OECD 425) 24000 mg/kg (rat) (OECD 407)
Inhalative	LC0/4hr.	6.82 mg/lit (rat)
Irritation of skin	Skin irritation	Not irritating (rabbit)
Irritation of eyes	Eye irritation	Not irritating (rabbit)
Sensitisation	Skin Sensitization Chromosome aberration in vivo In vitro mammalian chromosome aberration test	Not sensitizing (mouse) Negative (mouse) Negative (hamster)

- **Primary irritant effect:**
  On the skin: No irritant effect
  On the eye: No irritant effect
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
  When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.
  The substance is not subject to classification according to the latest version of the EU lists.
- **Toxicokinetics, metabolism and distribution**
  Absorption and bioavailability is very limited due to low solubility in aqueous and organic solvents.
- **Repeated dose toxicity**
  Prolonged inhalation may lead to chronic respiratory irritation.
- **CRM effects (carcinogenity, mutagenicity and toxicity for reproduction)**
  No evidence of carcinogenic, mutagenic, affects on reproduction.

12. Ecological information

- **Toxicity**

• **Aquatic toxicity**	
13463-67-7 titanium dioxide	
EC0/96 hr.	> 5000 mg/lit (bacteria)
LC50/72 h. (static)	> 1000 mg/lit (Fish)

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- **Persistence and degradability**
  Easily removable from water.
  This product is according to previous experiences inert and non-degradable.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential:** Does not accumulate in organisms.
- **Mobility in soil:** Insoluble. Expected to remain on soil surface.
- **Ecotoxical effects:**
- **Remark:** The product does not contain heavy metals in concentrations of concern for wastewater.
- **Remark:**
  Incidental down-the-drain disposal of small quantities of the product will not affect the performance of wastewater treatment systems.
- **Other information:** No data can be given due to the product's insolubility in water.
- **Additional ecological information:** Contains Titanium.
- **General notes:** Generally not hazardous for water.
- **PBT:** Not applicable
- **vPvB:** Not applicable
- **Other adverse effects:** No further relevant information available.

13. Disposal considerations

- **Water treatment methods**
- **Recommendation**
  Any disposal practice must be in compliance with all local and national laws and regulations. Do not dump into any sewers, on the ground, or into any body of water.
  Contact waste processors for recycling information.
  This product is a non-hazardous waste material suitable for approved solid waste landfills.
- **Uncleaned packaging:**
- **Recommendation:**
  Disposal must be made according to official regulations.
  Packagings that may not be cleansed are to be disposed of in the same manner as the product.
  Paper bags may be incinerated or disposed of in an appropriate landfill in accordance with national and local laws.

14. Transport Information

- **UN-Number**
- **ADR, ADN, IMDG, IATA** Void
- **UN proper shipping name**
- **ADR, ADN, IMDG, IATA** Void
- **Transport hazard class(es)**
- **ADR, ADN, IMDG, IATA**
- **Class** Void
- **Packing group**
- **ADR, IMDG, IATA** Void
- **Environmental hazards:**
- **Marine pollutant:** No
- **Special precautions for user:** Not applicable

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- **Transport in bulk according to Anex II of MARPOL73/78 and the IBC code** Not applicable
- **UN "Model Regulation":** -

15. Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Labelling according to Regulation (EC) No 1272.2008:** Void
- **Hazard pictograms:** Void
- **Signal word:** Void
- **Hazard statements:** Void
- **Chemical safety assessment** A Chemical Safety Assessment has not been carried out.

16. Other information

- **Abbreviations and acronyms:**
  RID: Règlement internation concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Carriage of Dangerous Goods by Rail).
  ICAO: International Civil Aviation Organisation
  ADR: Accord europèen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road).
  IMDG: International Maritime Code for Dangerous Goods
  IATA: International Air Transport Association
  GHS: Globally Harmonized System of Classification and Labelling of Chemicals
  EINECS: European Inventory of Existing Commercial Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  NOAEL: Non Observed Adverse Effects Level
  LOAEC: Lowest Observable Adverse Effect Concentration
  EC50: Maximal effective concentration, 50 percent