Name of the Product	**Kao & Michayluk Macroelements**
Code No.	**TS2058**

Section 1 : **Chemical Identification**

Code No.	:	**TS2058**
Name of the Product	:	**Kao & Michayluk Macroelements**
Produced by	:	Central Drug House Pvt. Ltd.
Address	:	7/28 Vardaan House, Darya Ganj, New Delhi (INDIA)
Tel. No.	:	00 91 11 49404040

Section 2 Hazards Identification

2.1 Classification of the substance or mixture

CLP Classification-Regulation (EC) No. 1272/2008[EU-GHS/CLP]

Oxidising solids, (Category 3), H272
Skin corrosion or irritation, (Category 2), H315
Serious eye damage or eye irritation, (Category 2A), H319
Specific target organ toxicity, single exposure, Respiratory tract irritation, (Category 3), H335
For the full text of the H-Statements mentioned in this Section, See Section 16

2.2 Label elements

Labeling according to Regulation (EC) No.1272/2008

Pictogram
Signal word Warning

Hazard Statement(s)

H272	May intensify fire; oxidizer
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation

Precautionary Statement (s)

P210	Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contactlenses, if present and easy to do. Continue rinsing.
P370 + P378	In case of fire: Use suitable extinguishing media for extinction.

2.3 Other Hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Section 3 Composition/Information On Ingredients

3.1 Mixture

Component		Classification	Concentration
Potassium nitrate			
CAS No. :	7757-79-1	**As Per EC Regulation 1272/2008**	>=50 - <=55%
EC No. :	231-818-8	Ox. Sol. 3 H272	

Component	Classification	Concentration
Ammonium nitrate		
CAS No. : 6484-52-2 EC No. : 229-347-8	**As Per EC Regulation 1272/2008** Ox. Sol. 3; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3 H272; H315; H319; H335	>=15 - <=20%

Component	Classification	Concentration
Calcium chloride, anhydrous		
CAS No. : 10043-52-4 EC No. : 233-140-8	**As Per EC Regulation 1272/2008** Eye Irrit. 2A H319	>=10 - <=15%

For the full text of the H-Statements and classification mentioned in this Section, see Section 16

Section 4 First - Aid Measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing,give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse immediately with plenty of water for at least 15 minutes. Consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11.

4.3 Indication of immediate medical attention and special treatment needed

Treat symptomatically.

Section 5 Fire Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media

No data available.

5.2 Special hazards arising from the substance or mixture

Magnesium oxides, Sulphur oxides, Sodium oxides, Iron oxides, Calcium Oxide, Cobalt oxides, Copperoxides, Manganese oxides,, Molybdenum oxides, Oxides of Phosphorus, Potassium oxides, Zinc oxides

5.3 Precautions for fire-fighters

Cool closed containers exposed to fire with water spray.

5.4 Further information

Wear self-contained breathing apparatus for firefighting if necessary.

Section 6	**Accidental Release Measures**
	6.1 Personal precautions, protective equipment and emergency procedures Use personnel protective equipment. Avoid dust formation. Avoid breathing vapours , mist or gas Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8. **6.2 Environmental precautions** Prevent further leakage or spillage if safe to do so. DO not let product enter drains. Discharge into environmental Must be avoided **6.3 Methods and materials for containment and cleaning up** Keep in suitable, closed containers for disposal. Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal **6.4 Reference to other sections** For disposal see Section 13.
Section 7	**Handling and Storage**
	7.1 Precautions for safe handling Avoid formation of dust and aerosols. Wear protective gloves and eye/face protection. Use only in well ventilated areas. Keep away from heat, sparks and open flame. **7.2 Conditions for safe storage, including any incompatibilities** Store in cool/well-ventilated place. Storage class (TRGS 510): Oxidizing Solids ***Recommended Storage Temperature :*** 2 to 8° C **7.3 Specific end uses** Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.
Section 8	**Exposure Controls / Personal Protection**
	8.1 Control parameters **8.2 Exposure controls** ***Appropriate engineering controls*** Handle in accordance to general industrial hygiene and safety practice. Wash hands before breaks, immediately after handling the products and at the end of workday. ***Personal protective equipment*** ***Eye/face protection*** Safety glasses with side-shields conforming to EN 166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU). Have eye-washing facilities readily available where eye contact can occur. ***Skin protection*** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. ***Body protection*** Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. ***Respiratory protection*** Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

	Environment exposure controls Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
Section 9	**Physical and Chemical Properties**
	9.1 Information on basic physical and chemical properties

Appearance	White to off-white, homogenous powder.
Odour	No data available
Odour Threshold	No data available
pH	4.5 -5.5
Melting/freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	No data available
Upper/lower flammability or explosive limits	No data available
Evaporation rate	No data available
Flammability (Solid, gas)	No data available
Vapour pressure	No data available
Relative density	No data available
Water solubility	Soluble in water
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Vapour density	No data available
Thermal decomposition	No data available

9.2 Other safety information

No data available

Section 10	**Stability and Reactivity**

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

No data available

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions - Nitrogen oxides(NOx), Sulphur oxides, Oxides of phosphorus,. Potassium oxides, Magnesium oxide, Cobalt/cobalt oxides, Calcium oxide, Copper oxides

Section 11	**Toxicological Information**
	11.1 Information on toxicological effects ***Acute toxicity*** No data available Remarks : No data available No data available ***Skin corrosion/irritation*** No data available ***Serious eye damage/eye irritation*** No data available ***Respiratory or skin sensitisation*** No data available ***Germ cell mutagenicity*** No data available ***Carcinogenicity*** IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. ***Reproductive toxicity*** No data available ***Specific target organ toxicity - repeated exposure*** No data available ***Aspiration hazard*** No data available ***Additional Information*** RTECS **:** Not Applicable
Section 12	**Ecological Information**
	12.1 Toxicity No data available **12.2 Persistence and degradability** No data available **12.3 Bioaccumulative potential** No data available **12.4 Mobility in soil** No data available **12.5 PBT and vPvB assessment** This preparation contains no substance considered to be persistent, bioaccumulating or toxic (PBT)or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. **12.6 Other adverse effects** No data available
Section 13	**Disposal Considerations**
	13.1 Waste treatments methods **Product** Dispose of as unused product **13.2 Contaminated packaging** Burn in a chemical incinerator equipped with an afterburner and srcubber but exert extra care in igniting as this material is highly flammable. Contact a licenced professional waste disposal service todispose off this material.

Section 14	**Transport Information**
	14.1 UN-No ADNR : 1477 ADR : 1477 IATA_C : 1477 IATA_P : 1477 IMDG : 1477 RID : 1477 **14.2 UN proper shipping name** ADNR : Nitrates, inorganic, n.o.s. ADR : Nitrates, inorganic, n.o.s. IATA_C : Nitrates, inorganic, n.o.s. IATA_P : Nitrates, inorganic, n.o.s. IMDG : Nitrates, inorganic, n.o.s. RID : Nitrates, inorganic, n.o.s. **14.3 Transport hazard class (es)** ADNR : 5.1 ADR : 5.1 IATA_C : 5.1 IATA_P : 5.1 IMDG : 5.1 RID : 5.1 **14.4 Packaging group** ADNR : II ADR : II IATA_C : II IATA_P : II IMDG : II RID : II **14.5 Environmental hazards** ADR : No IMDG : Marine Pollutant : No IATA_C : No **14.6 Special precautions for use** No data available
Section 15	**Regulatory Information**
	This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006. **15.1 Safety health and environment regulations/legislation specific for the substance or mixture** No data available **15.2 Chemical Safety Assessment** For this product a chemical safety assessment was not carried out.
Section 16	**Other Information**
	H272 May intensify fire; oxidizer H315 Causes skin irritation H319 Causes serious eye irritation H335 May cause respiratory irritation Eye Irrit. 2A Serious eye damage or eye irritation, Category 2A Ox. Sol. 3 Oxidising solids, Category 3 Skin Irrit. 2 Skin corrosion or irritation, Category 2 STOT SE 3 Specific target organ toxicity, single exposure, Respiratory tract irritation, Category 3 **Further Information** The information contained in this data sheet represents the best information currently available to us. However, no warranty is made with respect to its completeness and we assume no liability resulting from its use. The information is offered solely for user's obligation to investigate and determine the suitability of the information for their particular purpose.