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MATERIAL SPECIFICATIONS & TEST METHODS OF CATTLE FEED MINERAL MIXTURE INGREDIENTS

DOCUMENT NO.: GTC/CFP/0024/03/070823

PURCHASE DEPARTMENT (CATTLE FEED)

MEHSANA DISTRICT CO-OPERATIVE MILK PRODUCERS' UNION LIMITED

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MEHSANA DISTRICT CO-OPERATIVE MILK PRODUCERS' UNION LIMITED
Material Specifications and Test Methods of Cattle Feed Mineral Mixture Ingredients
DOCUMENT NO.: GTC/CFP/0024/03/070823

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4.0 Technical Specifications of Cattle Feed Raw Materials

4.1 Material Acceptance Criteria

When the materials (consignment) will reach our cattle feed plant, the physical conditions and in case of packaging materials, cleanliness will be thoroughly checked by the Store Personnel along with Personnel of the respective department; it is chiefly Quality Assurance.

Later, the physical quality parameters will be primarily checked by the quality assurance personnel (Sampler & if, required; Head of the Department) before accepting the material & then, only; it will be allowed for unloading at our inventory.

If; the parameters will not meet the requirements (Physically), the materials will be strictly rejected &/or may be accepted as a whole or partially in a special circumstance considering the significance and variability of quality parameters & with only, kind approval of I/C Managing Director.

Also, the material already unloaded at our inventory, if; found inferior in quality when tested chemically, the material (consignment) will be rejected & the supplier will have to lift-up the rejected material (consignment) at earliest i.e. within 15 days period of time.

**Cadmium Guarantee (10 mg/kg Max) in all
mineral mixture salts and DCP**

**Test: Cadmium
Guarantee: 10 mg/kg Max**



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4.2 Material Specifications & Premium/Rebate Calculation Sheet

Material Name: COPPER SULPHATE

SAP CODE: CFEE000289

Specification: COPPER SULPHATE

| Test | Specification | Max./Min. Rebate Limits | Unit |
|--------|---------------|-------------------------|------|
| COPPER | Min. 24.00 | Down to 22.00 % | % |
| PURITY | 100 % | | % |

Premium/Rebate Calculation:

| Mineral salt | Active element (%) | Revised cut-off level of acceptance | | Rebate for each mineral element, up to cut off level of 1 st stage | Rebate for each mineral element, up to cut off level of 2 nd stage |
|--------------------------------------|--------------------|-------------------------------------|-----------------------|---|---|
| | | 1 st stage | 2 nd stage | | |
| Copper sulphate (CuSO ₄) | Cu (%): 24 (Min) | 23.0 | 22.0 | Rebate @ 0.5% of the gross price of copper sulphate for decrease in copper by 0.1% unit, from 24% to 23%. | Rebate @ 1% of the gross price of copper sulphate for decrease in copper by 0.1% unit, from 23% to 22%. |

Sampling Process:

| Frequency | Size of Sample | |
|------------------|--------------------|-----------------|
| | Selection Criteria | Sample Quantity |
| Each Consignment | 100% Bags | 1000 g |



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Material Name: ZINC SULPHATE

SAP CODE: CFEED000287

Specification: ZINC SULPHATE

| Test | Specification | Max./Min. Rebate Limits | Unit |
|--------|---------------|-------------------------|------|
| ZINC | Min. 33.00 | Down to 28.00 | % |
| PURITY | 100 % | | % |

Premium/Rebate Calculation: ZINC SULPHATE

| Mineral salt | Active element (%) | Revised cut-off level of acceptance | | Rebate for each mineral element, up to cut off level of 1 st stage | Rebate for each mineral element, up to cut off level of 2 nd stage |
|------------------------------------|---------------------|-------------------------------------|-----------------------|---|---|
| | | 1 st stage | 2 nd stage | | |
| ZINC SULPHATE (ZnSO ₄) | Zn (%): 33.0 (Min.) | 30.0 | 28.0 | Rebate @ 0.5% of the gross cost of zinc sulphate for decrease in Zn by 0.1% unit, from 33 to 30%. | Rebate @ 1% of the gross cost of zinc sulphate for decrease in Zn by 0.1% unit, from 30 to 28%. |

Sampling Process:

| Frequency | Size of Sample | |
|------------------|--------------------|-----------------|
| | Selection Criteria | Sample Quantity |
| Each Consignment | 100% Bags | 1000 g |



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Material Name: MANGANESE SULPHATE

SAP CODE: CFEED000154

Specification: MANGANESE SULPHATE

| Test | Specification | Max./Min. Rebate Limits | Unit |
|------------------|---------------|-------------------------|------|
| MANGANESE | Min. 31.00 | Down to 27.00 | % |
| PURITY | 100 % | | % |

Premium/Rebate Calculation: MANGANESE SULPHATE

| Mineral salt | Active element (%) | Revised cut-off level of acceptance | | Rebate for each mineral element, up to cut off level of 1 st stage | Rebate for each mineral element, up to cut off level of 2 nd stage |
|---|---------------------|-------------------------------------|-----------------------|--|--|
| | | 1 st stage | 2 nd stage | | |
| Manganese sulphate (MnSO ₄) | Mn (%): 31.0 (Min.) | 29.0 | 27.0 | Rebate @ 0.5% of the gross cost of manganese sulphate for decrease in Mn by 0.1% unit, from 31 to 29%. | Rebate @ 1% of the gross cost of manganese sulphate for decrease in Mn by 0.1% unit, from 29 to 27%. |

Sampling Process:

| Frequency | Size of Sample | |
|------------------|--------------------|-----------------|
| | Selection Criteria | Sample Quantity |
| Each Consignment | 100% Bags | 1000 g |



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Material Name: MAGNESIUM OXIDE

SAP CODE: CFEE000010

Specification: MAGNESIUM OXIDE

| Test | Specification | Max./Min. Rebate Limits | Unit |
|-----------|---------------|-------------------------|------|
| MAGNESIUM | Min. 52.00 | Down to 48.00 | % |
| PURITY | 100 % | | % |

Premium/Rebate Calculation:

| Mineral salt | Active element (%) | Revised cut-off level of acceptance | | Rebate for each mineral element, up to cut off level of 1 st stage | Rebate for each mineral element, up to cut off level of 2 nd stage |
|-----------------------|---------------------|-------------------------------------|-----------------------|---|---|
| | | 1 st stage | 2 nd stage | | |
| Magnesium oxide (MgO) | Mg (%): 52.0 (Min.) | 50.0 | 48.0 | Rebate @ 0.5% of the gross cost of magnesium oxide for decrease in Mg by 0.1% unit, from 52 to 50%. | Rebate @ 1% of the gross cost of magnesium oxide for decrease in Mg by 0.1% unit, from 50 to 48%. |

Sampling Process:

| Frequency | Size of Sample | |
|------------------|--------------------|-----------------|
| | Selection Criteria | Sample Quantity |
| Each Consignment | 100% Bags | 1000 g |



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Material Name: COBALT SULPHATE

SAP CODE: CFEED000290

Specification: COBALT SULPHATE

| Test | Specification | Max./Min. Rebate Limits | Unit |
|--------|---------------|-------------------------|------|
| COBALT | Min. 20.00 | Down to 18.00 | % |
| PURITY | 100 % | | % |

Premium/Rebate Calculation:

| Mineral salt | Active element (%) | Revised cut-off level of acceptance | | Rebate for each mineral element, up to cut off level of 1 st stage | Rebate for each mineral element, up to cut off level of 2 nd stage |
|--------------------------------------|---------------------|-------------------------------------|-----------------------|---|---|
| | | 1 st stage | 2 nd stage | | |
| Cobalt sulphate (CoSO ₄) | Co (%): 20.0 (Min.) | 19.0 | 18.0 | Rebate @ 0.5% of the gross cost of cobalt sulphate for decrease in Co by 0.1% unit, from 20 to 19%. | Rebate @ 1% of the gross cost of cobalt sulphate for decrease in Co by 0.1% unit, from 19 to 18%. |

Sampling Process:

| Frequency | Size of Sample | |
|------------------|--------------------|-----------------|
| | Selection Criteria | Sample Quantity |
| Each Consignment | 100% Bags | 1000 g |



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Material Name: POTASSIUM IODIDE

SAP CODE: CFEE000153

Specification: POTASSIUM IODIDE

| Test | Specification | Max./Min. Rebate Limits | Unit |
|-----------|---------------|-------------------------|------|
| POTASSIUM | Min. 75.00 | Min. 73.00 | % |
| PURITY | 100 % | | % |

Premium/Rebate Calculation: POTASSIUM IODIDE

| Mineral salt | Active element (%) | Revised cut-off level of acceptance | | Rebate for each mineral element, up to cut off level of 1 st stage | Rebate for each mineral element, up to cut off level of 2 nd stage |
|-----------------------|--------------------|-------------------------------------|-----------------------|--|--|
| | | 1 st stage | 2 nd stage | | |
| Potassium iodide (KI) | I (%): 75.0 (Min.) | 74.0 | 73.0 | Rebate @ 0.5% of the gross cost of KI for decrease in iodine by 0.1% unit, from 75 to 74%. | Rebate @ 1% of the gross cost of KI for decrease in iodine by 0.1% unit, from 74 to 73%. |

Sampling Process:

| Frequency | Size of Sample | |
|------------------|--------------------|-----------------|
| | Selection Criteria | Sample Quantity |
| Each Consignment | 100% Bags | 1000 g |



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Material Name: SODIUM THIOSULPHATE

SAP CODE: CFEED000448

Specification: SODIUM THIOSULPHATE

| Test | Specification | Max./Min. Rebate Limits | Unit |
|---------|---------------|-------------------------|------|
| SULPHUR | Min. 39.0 | Down to 35.00 | % |
| PURITY | 100 % | | % |

Premium/Rebate Calculation: SODIUM THIOSULPHATE

| Mineral salt | Active element (%) | Revised cut-off level of acceptance | | Rebate for each mineral element, up to cut off level of 1 st stage | Rebate for each mineral element, up to cut off level of 2 nd stage |
|--|--------------------|-------------------------------------|-----------------------|--|--|
| | | 1 st stage | 2 nd stage | | |
| Sodium thiosulphate (Na ₂ S ₂ O ₃) | S (%): 39.0 (Min.) | 37.0 | 35.0 | Rebate @ 0.5% of the gross cost of sodium thiosulphate for decrease in S by 0.1% unit, from 39 to 37%. | Rebate @ 1% of the gross cost of sodium thiosulphate for decrease in S by 0.1% unit, from 37 to 35%. |

Sampling Process:

| Frequency | Size of Sample | |
|------------------|--------------------|-----------------|
| | Selection Criteria | Sample Quantity |
| Each Consignment | 100% Bags | 1000 g |



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Material Name: FERROUS SULPHATE

SAP CODE:

Specification: FERROUS SULPHATE

| Test | Specification | Max./Min. Rebate Limits | Unit |
|---------|---------------|-------------------------|------|
| FERROUS | Min. 30.0 | Down to 26.00 | % |
| PURITY | 100 % | | % |

Premium/Rebate Calculation: FERROUS SULPHATE

| Mineral salt | Active element (%) | Revised cut-off level of acceptance | | Rebate for each mineral element, up to cut off level of 1 st stage | Rebate for each mineral element, up to cut off level of 2 nd stage |
|---------------------------------------|---------------------|-------------------------------------|-----------------------|---|---|
| | | 1 st stage | 2 nd stage | | |
| Ferrous sulphate (FeSO ₄) | Fe (%): 30.0 (Min.) | 28.0 | 26.0 | Rebate @ 0.5% of the gross cost of ferrous sulphated for decrease in Fe by 0.1% unit, from 30 to 28%. | Rebate @ 1% of the gross cost of ferrous sulphated for decrease in Fe by 0.1% unit, from 28 to 26%. |

Sampling Process:

| Frequency | Size of Sample | |
|------------------|--------------------|-----------------|
| | Selection Criteria | Sample Quantity |
| Each Consignment | 100% Bags | 1000 g |



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Material Name: Di-calcium Phosphate (DCP)

SAP CODE: CFEED000074

Specification: DCP

| Test | Specification | Max./Min. Rebate Limits | Unit |
|-----------------|---------------|-------------------------|-------|
| Moisture (%) | Max. 5.00 | Up to 7.00 | % |
| Calcium (%) | Min. 23.00 | Down to 21.00 | % |
| Phosphorus (%) | Min. 18.00 | Down to 17.00 | % |
| Fluorine (%) | Max. 0.10 | Up to 0.14 | % |
| AlA/Silica (%) | Max. 1.00 | Up to 2.00 | % |
| Total Ash (%) | Min 73.5 | Down to 70.00 | % |
| Lead (mg/kg) | Max 30.00 | Up to 40.00 | Mg/kg |
| Arsenic (mg/kg) | Max 10.00 | Up to 15.00 | Mg/kg |

Premium/Rebate Calculation: DCP

| Quality Parameter | Guarantee | Revised cut-off level of acceptance | | Rebate for each mineral element, up to cut off level of 1 st stage | Rebate for each mineral element, up to cut off level of 2 nd stage |
|-------------------|------------|-------------------------------------|-----------------------|--|--|
| | | 1 st stage | 2 nd stage | | |
| Moisture (%) | Max. 5.00 | 6.00 | 7.00 | @ 0.1% of the gross price for increase in moisture by 0.1% unit, from 5 to 6%. | @ 0.2% of the gross price for increase in moisture by 0.1% unit, from 6 to 7%. |
| Calcium (%) | Min. 23.00 | 22.00 | 21.00 | @ 0.3% of the gross price for decrease in Ca by 0.1% unit, from 23 to 22%. | @ 0.6% of the gross price for decrease in Ca by 0.1% unit, from 22 to 21%. |
| Phosphorus (%) | Min. 18.00 | 17.5 | 17.00 | @ 0.2% of the gross price for decrease in P by 0.1% unit, from 18 to 17.5%. | @ 0.4% of the gross price for decrease in P by 0.1% unit, from 17.5 to 17%. |
| Fluorine (%) | Max. 0.10 | 0.12 | 0.14 | @ 0.5% of the gross price for | @ 1% of the gross price for increase |



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| Quality Parameter | Guarantee | Revised cut-off level of acceptance | | Rebate for each mineral element, up to cut off level of 1 st stage | Rebate for each mineral element, up to cut off level of 2 nd stage |
|-------------------|------------|-------------------------------------|-----------------------|--|---|
| | | 1 st stage | 2 nd stage | | |
| | | | | increase in F by 0.01% unit, from 0.10 to 0.12%. | in F by 0.01% unit, from 0.12 to 0.14%. |
| AlA/Silica (%) | Max. 1.00 | 1.50 | 2.00 | @ 0.1% of the gross price for increase in silica by 0.1% unit, from 1.0 to 1.5%. | @ 0.2% of the gross price for increase in silica by 0.1% unit, from 1.5 to 2.0%. |
| Total Ash (%) | Min 73.5 | 72.5 | 70.00 | @ 0.05% of the gross price for decrease in total ash by 0.1% unit, from 73.5 to 72.5%. | @ 0.1% of the gross price for decrease in total ash by 0.1% unit, from 72.5 to 70%. |
| Total Ash (%) | Max. 78.00 | 80.00 | 82.00 | @ 0.05% of the gross price for increase in total ash by 0.1% unit, from 78 to 80%. | @ 0.1% of the gross price for increase in total ash by 0.1% unit, from 80% to 82%. |
| Lead (mg/kg) | Max. 30.00 | 35.00 | 40.00 | @ 0.2% of the gross price for each mg increase in lead, from 30 to 35 mg. | @ 0.4% of the gross price for each mg increase in lead, from 35 to 40 mg. |
| Arsenic (mg/kg) | Max. 10.00 | 12.00 | 15.00 | @ 0.2% of the gross price for each mg increase in arsenic, from 10 to 12 mg. | @ 0.4% of the gross price for each mg increase in arsenic, from 12 to 15 mg. |

Note: The values for requirements are on moisture-free basis.

Sampling Process:

| Frequency | Size of Sample | |
|------------------|--------------------|-----------------|
| | Selection Criteria | Sample Quantity |
| Each Consignment | 100% Bags | 1000 g |

Sampling Process:



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1. The sample should be taken into each consignment bags randomly as per above quality norms.
2. If anyone sample at the time of double sampling fails, whole lot is rejected.
3. Material shall be free from live weevils/ insects.
4. Material should preferably be packed & supplied in sound bags.
5. Suppliers should provide traceability for original source of materials with relevant documents, at the time of supply.
6. Weighment, sampling and analysis will be done at our factory.

Note:

1. Material or mineral salt must be free flowing and dry powder.
2. There should be no adulteration in material or mineral salt, it should be free from impurities and unadulterated.
3. Moisture should be in below limit as per mineral salt standard.
4. Silica or AIA should be in limit.
5. Heavy metals should be in below detection limit in material or mineral salt. There should be no any harmful substance and Anti-Nutritional factor in material.
6. Any differ in quality or varying of material or mineral salt in same consignment then material shall not be accepted.
7. Every consignment of material will be accepted only when accompanied by COA.
8. The sample will be tested at In-house lab OR CALF (NDDDB-ANAND-If require) and finally taking decision for additional rebate or accept depend on union authority.



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Material Name: COPPER GLYCINATE (PURE 15%)

SAP CODE: CFEED000243

Specification:

| Test | Specification | Max./Min. Rebate Limits | Unit |
|-----------|---|-------------------------|------|
| Moisture | Max. 5.00 | Up to 8.00 | % |
| Copper | Min. 15.00 | Down to 12.00 | % |
| Nitrogen | Min. 5.8 | Down to 2.8 | % |
| FTIR test | Disappearance of -COOH peak at 504 cm ⁻¹ wavelength & NH ₂ broad band stretch between 3000-3500 cm ⁻¹ wavelength | | |

Premium/Rebate Calculation:

| Quality Parameter | Guarantee (%) | Up to/ Down to | Rebate-1 | Up to/ Down to | Rebate-2 | Up to/ Down to | Rebate-3 |
|-------------------|---------------|-------------------|----------|-------------------|----------|-------------------|----------|
| Moisture | Max. 5.00 | 6.00 | 1.0 | 7.0 | 2.00 | 8.00 | 3.00 |
| Copper | Min. 15.00 | 14.00 | 7.00 | 13.00 | 8.00 | 12.00 | 9.00 |
| Nitrogen | Min. 5.8 | 4.8 | 18.00 | 3.8 | 21.00 | 2.8 | 26.00 |

Sampling Process:

| Frequency | Size of Sample |
|------------------|--------------------|
| | Selection Criteria |
| Each Consignment | Random Sampling |



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Material Name: ZINC GLYCINATE (PURE 15%)

SAP CODE: CFEED000244

Specification:

| Test | Specification | Max./Min. Rebate Limits | Unit |
|-----------|---|-------------------------|------|
| Moisture | Max. 5.00 | Up to 8.00 | % |
| Zinc | MIN. 15.00 | Down to 12.00 | % |
| Nitrogen | Min. 5.8 | Down to 2.8 | % |
| FTIR test | Disappearance of -COOH peak at 504 cm ⁻¹ wavelength & NH ₂ broad band stretch between 3000-3500 cm ⁻¹ wavelength | | |

Premium/Rebate Calculation:

| Quality Parameter | Guarantee (%) | Up to/ Down to | Rebate-1 | Up to/ Down to | Rebate-2 | Up to/ Down to | Rebate-3 |
|-------------------|---------------|-------------------|----------|-------------------|----------|-------------------|----------|
| Moisture | Max. 5.00 | 6.00 | 1.0 | 7.0 | 2.00 | 8.00 | 3.00 |
| Zinc | Min. 15.00 | 14.00 | 7.00 | 13.00 | 8.00 | 12.00 | 9.00 |
| Nitrogen | Min. 5.8 | 4.8 | 18.00 | 3.8 | 21.00 | 2.8 | 26.00 |

Sampling Process:

| Frequency | Size of Sample |
|------------------|--------------------|
| | Selection Criteria |
| Each Consignment | Random Sampling |



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Material Name: MANGANESE GLYCINATE (PURE 15%)

SAP CODE: CFEE000245

Specification:

| Test | Specification | Max./Min. Rebate Limits | Unit |
|-----------|---|-------------------------|------|
| Moisture | Max. 5.00 | Up to 8.00 | % |
| Manganese | MIN. 15.00 | Down to 12.00 | % |
| Nitrogen | Min. 5.8 | Down to 2.8 | % |
| FTIR test | Disappearance of -COOH peak at 504 cm-1 wavelength & NH2 broad band stretch between 3000-3500 cm-1 wavelength | | |

Premium/Rebate Calculation:

| Quality Parameter | Guarantee (%) | Up to/ Down to | Rebate-1 | Up to/ Down to | Rebate-2 | Up to/ Down to | Rebate-3 |
|-------------------|---------------|-------------------|----------|-------------------|----------|-------------------|----------|
| Moisture | Max. 5.00 | 6.00 | 1.0 | 7.0 | 2.00 | 8.00 | 3.00 |
| Manganese | Min. 15.00 | 14.00 | 7.00 | 13.00 | 8.00 | 12.00 | 9.00 |
| Nitrogen | Min. 5.8 | 4.8 | 18.00 | 3.8 | 21.00 | 2.8 | 26.00 |

Sampling Process:

| Frequency | Size of Sample |
|------------------|--------------------|
| | Selection Criteria |
| Each Consignment | Random Sampling |



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Material Name: CHROMIUM CHELATE

SAP CODE: CFEEED000246

Specification:

| Test | Specification | Max./Min. Rebate Limits | Unit |
|-----------|---|-------------------------|------|
| Moisture | Max. 5.00 | Up to 8.00 | % |
| Chromium | Min 8.00 | Down to 5.00 | % |
| Nitrogen | Min. 5.8 | Down to 2.8 | % |
| FTIR test | Disappearance of -COOH peak at 504 cm ⁻¹ wavelength & NH ₂ broad band stretch between 3000-3500 cm ⁻¹ wavelength | | |

Premium/Rebate Calculation:

| Quality Parameter | Guarantee (%) | Up to/Down to | Rebate-1 | Up to/Down to | Rebate-2 | Up to/Down to | Rebate-3 |
|-------------------|---------------|---------------|----------|---------------|----------|---------------|----------|
| Moisture | Max. 5.00 | 6.00 | 1.0 | 7.0 | 2.00 | 8.00 | 3.00 |
| Chromium | Min 8.00 | 7.00 | 7.00 | 6.00 | 8.00 | 5.00 | 9.00 |
| Nitrogen | Min. 5.8 | 4.8 | 18.00 | 3.8 | 21.00 | 2.8 | 26.00 |

Sampling Process:

| Frequency | Size of Sample |
|------------------|--------------------|
| | Selection Criteria |
| Each Consignment | Random Sampling |

NOTE: All THE REBATES ON CUMULATIVE BASIS

- Material shall be free flow in nature & free from other impurities.
- FTIR shall be as per specification only.
- Material shall be tested at NDDDB calf lab.



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Material Name: COPPER BIS GLYCINATE (PURE FORM-24 %)

SAP CODE: CFEED000294

Specification:

| Test | Specification | Max./Min. Rebate Limits | Unit |
|-----------|---|-------------------------|------|
| Moisture | Max. 5.00 | Up to 8.00 | % |
| Copper | Min. 24.00 | Down to 21.00 | % |
| Nitrogen | Min. 12.0 | Down to 9.00 | % |
| FTIR test | Disappearance of -COOH peak at 504 cm ⁻¹ wavelength & NH ₂ broad band stretch between 3000-3500 cm ⁻¹ wavelength | | |

Premium/Rebate Calculation:

| Quality Parameter | Guarantee (%) | Up to/Down to | Rebate-1 | Up to/Down to | Rebate-2 | Up to/Down to | Rebate-3 |
|-------------------|---------------|---------------|----------|---------------|----------|---------------|----------|
| Moisture | Max. 5.00 | 6.00 | 1.0 | 7.0 | 2.00 | 8.00 | 3.00 |
| Copper | Min. 24.00 | 23.00 | 7.00 | 22.00 | 8.00 | 21.00 | 9.00 |
| Nitrogen | Min. 12.00 | 11.00 | 18.00 | 10.00 | 21.00 | 9.00 | 26.00 |

Sampling Process:

| Frequency | Size of Sample |
|------------------|--------------------|
| | Selection Criteria |
| Each Consignment | Random Sampling |



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Material Specifications and Test Methods of Cattle Feed Mineral Mixture Ingredients
DOCUMENT NO.: GTC/CFP/0024/03/070823

Material Name: ZINC BIS GLYCINATE (PURE FORM-25 %)

SAP CODE: CFEED000295

Specification:

| Test | Specification | Max./Min. Rebate Limits | Unit |
|-----------|--|-------------------------|------|
| Moisture | Max. 5.00 | Up to 8.00 | % |
| Zinc | MIN. 25.00 | Down to 22.00 | % |
| Nitrogen | Min. 12.00 | Down to 9.00 | % |
| FTIR test | Disappearance of -COOH peak at 504 cm-1 wavelength & NH2 broad | | |

Premium/Rebate Calculation:

| Quality Parameter | Guarantee (%) | Up to/Down to | Rebate-1 | Up to/Down to | Rebate-2 | Up to/Down to | Rebate-3 |
|-------------------|---------------|---------------|----------|---------------|----------|---------------|----------|
| Moisture | Max. 5.00 | 6.00 | 1.0 | 7.0 | 2.00 | 8.00 | 3.00 |
| Zinc | MIN. 25.00 | 24.00 | 7.00 | 23.00 | 8.00 | 22.00 | 9.00 |
| Nitrogen | Min. 12.00 | 11.00 | 18.00 | 10.00 | 21.00 | 9.00 | 26.00 |

Sampling Process:

| Frequency | Size of Sample |
|------------------|--------------------|
| | Selection Criteria |
| Each Consignment | Random Sampling |



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Material Specifications and Test Methods of Cattle Feed Mineral Mixture Ingredients
DOCUMENT NO.: GTC/CFP/0024/03/070823

Material Name: MANGANESE GLYCINATE (PURE FORM)

SAP CODE:

Specification:

| Test | Specification | Max./Min. Rebate Limits | Unit |
|-----------|---|-------------------------|------|
| Moisture | Max. 5.00 | Up to 8.00 | % |
| Manganese | MIN. 22.00 | Down to 19.00 | % |
| Nitrogen | Min. 12.00 | Down to 9.00 | % |
| FTIR test | Disappearance of -COOH peak at 504 cm-1 wavelength & NH2 broad band stretch between 3000-3500 cm-1 wavelength | | |

Premium/Rebate Calculation:

| Quality Parameter | Guarantee (%) | Up to/ Down to | Rebate-1 | Up to/ Down to | Rebate-2 | Up to/ Down to | Rebate-3 |
|-------------------|---------------|-------------------|----------|-------------------|----------|-------------------|----------|
| Moisture | Max. 5.00 | 6.00 | 1.0 | 7.0 | 2.00 | 8.00 | 3.00 |
| Manganese | Min. 22.00 | 21.00 | 7.00 | 20.00 | 8.00 | 19.00 | 9.00 |
| Nitrogen | Min. 12.00 | 11.00 | 18.00 | 10.00 | 21.00 | 9.00 | 26.00 |

Sampling Process:

| Frequency | Size of Sample |
|------------------|--------------------|
| | Selection Criteria |
| Each Consignment | Random Sampling |



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DOCUMENT NO.: GTC/CFP/0024/03/070823

Material Name: CHROMIUM GLYCINATE (PURE FORM-1 6%)

SAP CODE: CFEED000346

Specification:

| Test | Specification | Max./Min. Rebate Limits | Unit |
|-----------|---|-------------------------|------|
| Moisture | Max. 5.00 | Up to 8.00 | % |
| Chromium | Min 16.00 | Down to 13.00 | % |
| Nitrogen | Min. 13.00 | Down to 10.00 | % |
| FTIR test | Disappearance of -COOH peak at 504 cm ⁻¹ wavelength & NH ₂ broad band stretch between 3000-3500 cm ⁻¹ wavelength | | |

Premium/Rebate Calculation:

| Quality Parameter | Guarantee (%) | Up to/ Down to | Rebate-1 | Up to/ Down to | Rebate-2 | Up to/ Down to | Rebate-3 |
|-------------------|---------------|-------------------|----------|-------------------|----------|-------------------|----------|
| Moisture | Max. 5.00 | 6.00 | 1.0 | 7.0 | 2.00 | 8.00 | 3.00 |
| Chromium | Min 16.00 | 15.00 | 7.00 | 14.00 | 8.00 | 13.00 | 9.00 |
| Nitrogen | Min. 13.00 | 12.00 | 18.00 | 11.00 | 21.00 | 10.00 | 26.00 |

Sampling Process:

| Frequency | Size of Sample |
|------------------|--------------------|
| | Selection Criteria |
| Each Consignment | Random Sampling |

NOTE: All THE REBATES ON CUMULATIVE BASIS

- Material shall be free flow in nature & free from other impurities.
- FTIR shall be as per specification only.
- Material shall be tested at NDDB calf lab.



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DOCUMENT NO.: GTC/CFP/0024/03/070823

Material Name: VITAMIN AD3

SAP CODE: CFEED000345

Specification: (Vitamin A- 5 Lacs IU + Vit-D3-1 Lacs IU)

| Test | Specification | Max./Min. Rebate Limits | Unit |
|------------|---------------|-------------------------|------|
| Vitamin A | 5 lacs Min. | Down to 4.40 lacs | IU |
| Vitamin D3 | 1 Lacs Min. | Down to 0.70 lacs | IU |

Premium/Rebate Calculation:

| Quality Parameter | Guarantee (%) | Up to/ Down to | Rebate-1 | Up to/ Down to | Rebate-2 | Up to/ Down to | Rebate-3 |
|-------------------|---------------|----------------|----------|----------------|----------|----------------|----------|
| Vitamin A | 5 lacs Min. | 4.80 lacs | 1.00 | 4.60 lacs | 2.00 | 4.40 lacs | 3.00 |
| Vitamin D3 | 1 Lacs Min. | 0.90 lacs | 1.00 | 0.80 lacs | 2.00 | 0.70 lacs | 3.0 |

Sampling Process:

| Frequency | Size of Sample |
|------------------|--------------------|
| | Selection Criteria |
| Each Consignment | Random Sampling |



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DOCUMENT NO.: GTC/CFP/0024/03/070823

Material Name: VITAMIN E (50 %)

SAP CODE: CFEE000105

Specification:

| Test | Specification | Max./Min. Rebate Limits | Unit |
|--------|---------------|-------------------------|------|
| Purity | 100 % Min. | Down to 97.00 % | % |

Premium/Rebate Calculation:

| Quality Parameter | Guarantee (%) | Up to/Down to | Rebate-1 | Up to/Down to | Rebate-2 | Up to/Down to | Rebate-3 |
|-------------------|---------------|---------------|----------|---------------|----------|---------------|----------|
| Purity | 100.00 | 99.00 | 1.00 | 98.00 | 2.00 | 97.00 | 3.00 |

Sampling Process:

| Frequency | Size of Sample |
|------------------|--------------------|
| | Selection Criteria |
| Each Consignment | Random Sampling |



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Material Specifications and Test Methods of Cattle Feed Mineral Mixture Ingredients
DOCUMENT NO.: GTC/CFP/0024/03/070823

Material Name: VENILLA FLAVOUR - THR

SAP CODE: VITMN000039

Specification:

| | |
|-------------------|--------------------------|
| Base | Coconut |
| Colour | Off white to white |
| Appearance | Fine free flowing powder |
| Sieve | Min. 95.00 % pass out |

Sampling Process: VENILLA FLAVOUR - THR

| Frequency | Size of Sample | |
|-------------------------|---------------------------|------------------------|
| | Selection Criteria | Sample Quantity |
| Each Consignment | Random Sampling | 500 g |

Note: Any deviation from the above specifications material shall be rejected.



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Material Specifications and Test Methods of Cattle Feed Mineral Mixture Ingredients
DOCUMENT NO.: GTC/CFP/0024/03/070823

NOTE: All THE REBATES ON CUMULATIVE BASIS

- **Material shall be free flow in nature & free from other impurities.**
- **Material shall be tested at NDDB calf lab.**
- **The all above materials, if found below our quality parameters and if required, may be consumed and ADDITIONAL REBATE as decided by the Union shall be applicable.**



MEHSANA DISTRICT CO-OPERATIVE MILK PRODUCERS' UNION LIMITED
Material Specifications and Test Methods of Cattle Feed Mineral Mixture Ingredients
DOCUMENT NO.: GTC/CFP/0024/03/070823

5.0 Test Methods

All test methods as per IS/NDDB manual.

Raw material, additives & packing material will be analyzed for its conformity to the laid down requirement. Following references is used to prepare the test method. For specific instrument like Dickey John/Foss NIR procedure provided by the manufacturer is used as reference.

Samples for testing would be drawn from each bag of each consignment and results of our laboratory shall be considered as final. A copy of testing reports shall be shared to the supplier.

In case of dispute on quality reports, the supplier needs to arrange testing of the samples drawn by the Union at Centre for Analysis & Learning in Livestock & Food (CALF), Near IRMA Gate, Anand 388 001. In such a case the Supplier will have to bear the cost of testing. (For Moisture, retesting is not allowed)

The quality reports received from the mutually agreed lab or CALF would be considered as final.

In case the goods fail the test as per the specifications prescribed, the supplier will replace the goods as per specifications within the delivery time period OR Union may accept with proportionate rebate / penalty as deemed fit

5.1 References of Testing Methods

| Sr. No. | Test | Reference |
|---------|-------------|--------------------------|
| 1 | Sample Size | IS:2052-1979, APPENDIX C |
| 2 | Moisture | IS 7874 (Part-I): 1975 |
| 3 | Protein | IS 7874 (Part-I): 1975 |
| 4 | Fat | IS 7874 (Part-I): 1975 |
| 5 | Crude Fiber | IS 7874 (Part-I): 1975 |
| 6 | Silica | IS 7874 (Part-I): 1975 |
| 7 | Calcium | NDDB Manual |
| 8 | Phosphorus | NDDB Manual |
| 9 | Urea | NDDB Manual |
| 10 | Vitamin-A | NDDB Manual |
| 11 | Vitamin-D | NDDB Manual |
| 12 | Density | NDDB Manual |
| 13 | Infestation | IS 7874 (Part- I) : 1975 |



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| | | |
|----|------|--------------------------|
| 14 | Dust | IS 7874 (Part- I) : 1975 |
|----|------|--------------------------|

~ End of DOCUMENT NO.: GTC/CFP/0024/01/171022 ~