1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Name of product : Amisulbrom 20 SC
Other names : NC-224 200 g/l Suspension Concentrate, NC-224 20SC, Leimay, Shinkon, Canvas, Sanblight
Formulation code : NC-224 20 SC 03
Type of formulation : Suspension concentrate (SC)

1.2 Relevant identified uses of the substance or mixture and uses advised against

Function : Plant protection product, Fungicide

1.3. Details of the supplier of the safety data sheet

Manufacturer and Supplier: Nissan Chemical Europe S.A.R.L.
Parc d'affaires de Crecy 10A rue de la Voie Lactéee, 69370 St-Didier-au-Mont-d'or, France
Contact person: Mr. Hitoshi Ueda
Phone: +33 (0)4 37 64 40 20, Fax: +33 (0)4 37 64 68 74

1.4. Emergency telephone number

Nissan Chemical Europe S.A.R.L.: +33 (0)4 37 64 40 20 (available only during office hours)

2. HAZARD IDENTIFICATION

2.1. Classification of the substance or mixture

Classification in accordance with Regulation (EC) No 1272/2008 [CLP]

Aquatic Acute 1, H400
Aquatic Chronic 1, H410

Classification in accordance with Council Directive 1999/45/EC

N- Dangerous for the environment, R50/53

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP]

Signal Word:
Warning

Hazard Statement:
H400: Very toxic to aquatic life
H410: Very toxic to aquatic life with long lasting effects

Precautionary Statement:
P273: Avoid release to the environment
P391: Collect spillage
P501: Dispose of contents/container in accordance with local regulation

2.3. Other hazards

The product will be regarded to be neither PBT nor vPvB.
3. COMPOSITION/INFORMATION OF INGREDIENTS

Substance or mixture: Mixture

**Chemical Composition:**
- Amisulbrom ............................................................. 20 % w/v
- Water ................................................................. > 50 % w/v
- Surfactant and others inert ingredients .................................. < 30 % w/v

**Active Ingredient**
- Common Name: Amisulbrom
- Code No.: NC-224
- CAS No.: 34863-87-0
- Chemical Name (CA): 3-[3-bromo-6-fluoro-2-methy-1H-indol-1-yl)sulfonyl]-N,N-dimethyl-1H-1,2,4-triazole-1-sulfonamide
- (IUPAC): 3-(3-bromo-6-fluoro-2-methylindol-1-yl)sulfonyl)-N,N-dimethyl-1,2,4-triazole-1-sulfonamide

Classification in accordance with Council Directive 67/548/EEC:
- Xn: Harmful
- N: Dangerous for the environment
- R20, R50/53

Classification in accordance with Regulation (EC) No 1272/2008:
- Acute Toxicity Category 4, Aquatic Acute 1, Aquatic Chronic 1
- H332, H400, H410

REACH registration No.: Not assigned
EINECS or ELINCS No.: Not available

**Inert Ingredient 1**
- Chemical Name: Poly(oxy-1,2-ethanediyl), .alpha.-[tris(1-phenylethyl)phenyl].omega.-hydroxy-
- CAS No.: 99734-09-5
- Content: < 5% w/w

Classification in accordance with Council Directive 67/548/EEC:
- N: Dangerous for the environment
- R52/53

Classification in accordance with Regulation (EC) No 1272/2008:
- Aquatic Chronic 3
- H412

REACH registration No.: Not disclosed
EINECS or ELINCS No.: 619-457-8

**Inert Ingredient 2**
- Chemical Name: Alkylpolyglucoside
- CAS No.: Not disclosed
- Content: < 20% w/w

Classification in accordance with Council Directive 67/548/EEC:
- Xi: Irritant
- R41

Classification in accordance with Regulation (EC) No 1272/2008:
- Eye Dam. 1
- H318

REACH registration No.: Not disclosed
EINECS or ELINCS No.: Not disclosed

4. FIRST AID MEASURES

4.1. Description of first aid measures

**Eye contact**: Immediately rinse with running water for at least 15 minutes. Seek medical advice.

**Skin contact**: Remove all contaminated clothing, shoes and socks from the affected area. Wash material off the skin in flowing water or shower with soap. If irritation persists, consult a physician immediately.
4. FIRST AID MEASURES (continued)

Inhalation: If respiratory discomfort occurs, move the person to fresh air. If not breathing, give mouth-to-mouth resuscitation (or an artificial respiration). Keep warm with blanket and keep at rest. Seek emergency medical advice.

Ingestion: Do not induce vomiting. Wash out mouth with water. Do not given anything by mouth if person is unconscious. Seek emergency medical advice.

4.2. Most important symptoms and effects, both acute and delayed
No symptoms have been identified in humans to date.

4.3. Indication of any immediate medical attention and special treatment needed
Treat based on judgment by physician in response to symptoms of patient. No specific antidotes are known.

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media
Suitable extinguishing media: Water, foam, dry chemicals or carbon dioxide.

Extinguishing media which shall not be used for safety reasons: High volume water jet.

5.2. Special hazards arising from the substance or mixture
Carbon dioxide, carbon monoxide, halogenated compounds and oxides of nitrogen and sulfur are potential thermal decomposed products.

5.3. Advice for firefighters
In the event of fire and/or explosion do not breathe fumes. Use self-contained breathing apparatus and protective clothing

Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures
Wear suitable protective clothing, shoes, gloves and goggles. Avoid contact with spilled product or contaminated surfaces. When dealing with a spillage do not eat, drink or smoke.

6.2. Environmental precautions
Keep unauthorized persons, children and animals away from the affected area. Prevent spillage from entering the drainage systems or watercourses.

6.3. Methods and material for containment and cleaning up
Carefully sweep up and collect the spilled material using an inert absorbent material (sand, vermiculite, or sawdust) and place in a closed container (drum) for disposal. Remove (large quantities) with vacuum truck. Do not raise dust. Wash affected area with water containing detergent.

6.4. Reference to other sections
See section 8 for personnel protective equipment.
See section 13 for waste disposal.
7. HANDLING AND STORAGE

7.1. Precautions for safe handling
No specific precautions required when handling unopened packs/containers. Avoid contact with skin or eyes. Protect containers against physical damage. Wear suitable protective clothing, shoes, gloves and goggles during handling. Do not eat, drink, or smoke during the work. Prevent spillage from entering the drainage systems or watercourses.

7.2. Conditions for safe storage, including any incompatibilities
Keep tightly closed in original labeled container. Store in a cool and dry place and protect from direct sunlight. Keep away from the reach of children. Keep away from foods, drinks and animal feeding stuffs.

7.3. Specific end use(s)
Use this product only for plant protection.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

8.1. Control parameters
Exposure limit values (DNEL, PNEC): Not established.

8.2. Exposure controls
Occupational exposure controls
Respiratory protection: Particle filter with medium efficiency for solid and liquid particles
Hand protection: Chemical resistant gloves, Rubber gloves
Eye protection: Safety glasses or goggles
Skin protection: Impervious clothing such as gloves, apron or PVC boots

Environmental exposure controls: Prevent spillage from entering the drainage systems or watercourses.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties
Appearance: Off white, opaque liquid
Odour: Odourless
pH: 8.1 in distilled water (1% w/v suspension)
Melting point/melting range: Not required
Boiling point/boiling range: Approximately 102°C
Flash point: None determinable; no flash point observed
Evaporation rate: Not available
Flammability: Not applicable. The preparation is a liquid, not a solid or gas.
Explosive properties: Not explosive
Oxidising properties: Not oxidising
Vapor pressure: 1.8 x 10^{-8} Pa at 25°C (amisulbrom)
Relative density: 1.13
Solubility: Toluene 88.6 g/L, Methanol 10.1 g/L at 20°C (amisulbrom)
Water solubility: 0.11 mg/l at 20°C (amisulbrom)
Partition coefficient (n-octanol/water): Log Pow (n-octanol/water) = 4.4 (amisulbrom)
Viscosity: 120 to 3000 mPa.s at 20°C, 50 to 2000 mPa.s at 40°C
Vapor density: Not available
Auto-ignition temperature: Not self-igniting below 400°C
Decomposition temperature: Not available.
9. PHYSICAL AND CHEMICAL PROPERTIES (continued)

9.2. Other information
No other information is available.

10. STABILITY AND REACTIVITY

10.1. Reactivity
May react with strong bases, acids or strong oxidizing agents, such as chlorates, nitrates, peroxides.

10.2. Chemical stability
Stable under normal ambient storage conditions.

10.3. Possibility of hazardous reactions
Hazardous reactions will not occur.

10.4. Conditions to avoid
Avoid high temperatures. Protect from sunlight, open flame, sources of heat and humidity.

10.5. Incompatible materials
May react with strong bases, acids or strong oxidizing agents, such as chlorates, nitrates, peroxides.

10.6. Hazardous decomposition products
None hazardous decomposition products under normal conditions of storage and use. Thermal decomposition products include carbon monoxide, sulfur oxides and halogenated compounds.

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Product</th>
<th>Acute oral toxicity</th>
<th>Acute dermal toxicity</th>
<th>Acute inhalation toxicity</th>
<th>Eye irritation</th>
<th>Skin irritation</th>
<th>Sensitization</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LD₅₀ (rats)</td>
<td>LD₅₀ (rats)</td>
<td>LC₅₀ (rats)</td>
<td>(rabbits)</td>
<td>(rabbits)</td>
<td>(guinea pigs)</td>
</tr>
<tr>
<td></td>
<td>&gt;5000 mg/kg</td>
<td>&gt;5000 mg/kg</td>
<td>&gt;6.43 mg/l (4 hrs.)</td>
<td>Not irritant</td>
<td>Not irritant</td>
<td>Not a sensitizer</td>
</tr>
</tbody>
</table>

**Amisulbrom active ingredient**

- **Toxicokinetics, metabolism and distribution**: Rapidly absorbed (C<sub>max</sub>2-6 hr). 50% oral absorption based on biliary and urinary excretion. Rapidly distributed but, no evidence for accumulation.
- **Short-term oral toxicity (90 days)**: NOAEL (rats) 171/587 mg/kg/day (M/F)
- **Short-term oral toxicity (1 year)**: NOAEL (dogs) 100 mg/kg/day
- **Short-term dermal toxicity (21 days)**: NOAEL (rats) 300/1000 mg/kg/day (M/F)
- **Chronic (1 years)**: NOEL (rats) 11.1/14.3 mg/kg/day
- **Carcinogenicity (2 years)**: NOEL (rats) 96/129 mg/kg/day (M/F). Not carcinogenic
- **Reproductive toxicity**: NOAEL (rats) 1200/261 mg/kg/day (Reproduction, M/F)
  - No effects on reproduction
- **Developmental toxicity**: NOEL (rabbits) 300 mg/kg/day. Not teratogenic
- **Mutagenicity**: Not mutagenic (Negative in <i>in vitro</i> & <i>in vivo</i> studies)

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

<table>
<thead>
<tr>
<th>Product</th>
<th>Toxicity to fish</th>
<th>Toxicity to Daphnia</th>
<th>Toxicity to algae</th>
<th>Toxicity to bees</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LC₅₀ (96 h, &lt;i&gt;Cyprinus carpio&lt;/i&gt;)</td>
<td>EC₅₀ (48 h, &lt;i&gt;Daphnia magna&lt;/i&gt;)</td>
<td>EC₅₀ (96 h, &lt;i&gt;P. subcapitata&lt;/i&gt;)</td>
<td>LD₅₀ (Oral/Contact, 48h, &lt;i&gt;Apis mellifera&lt;/i&gt;)</td>
</tr>
<tr>
<td></td>
<td>1900 µg as/l</td>
<td>44 µg as/l</td>
<td>42 µg as/l</td>
<td>&gt;100 µg/bee</td>
</tr>
</tbody>
</table>

Nissan Chemical Industries, Ltd.
12. ECOLOGICAL INFORMATION (continued)

Product
Toxicity to earthworm: LC$_{50}$ (14-day) >1000 ppm

Amisulbrom active ingredient
Toxicity to bird: LD$_{50}$ (Bobwhite quail and Mallard duck) >2000 mg/kg
Toxicity to bees: LD$_{50}$ (Oral/Contact, 48h, Apis mellifera) >100 µg/bee
Toxicity to earthworm: LC$_{50}$ (14 days, Eisenia fetida) >1000 mg/kg of soil
Soil micro-organism: No long-term influence on nitrogen and carbon transformation (<25% effect)
Sewage treatment: No inhibitory effect

12.2. Persistence and degradability
Product
Field studies with the product in 5 locations in EU indicate that mean DT$_{50}$ was 6.9 days.

Amisulbrom active ingredient
Amisulbrom is hydrolytically degraded, especially rapidly under alkaline condition. Amisulbrom is readily degraded in soils and water/sediment systems.

Hydrolysis (20°C): DT$_{50}$ 163 days (pH 4), 140 days (pH 7), 16 days (pH 9)
Aqueous photolysis (25°C): DT$_{50}$ 6.1 hours (pH 4, xenon arc lamp)
Degradation in soil (20°C): DT$_{50}$ 60 days (Geometric mean)
Ready biodegradability: Not readily biodegradable

12.3. Bioaccumulative potential
Product
No information is available for the product.

Amisulbrom active ingredient
The potential of the active ingredient to accumulate in biota and pass through the food chain is considered to be low based on the BCF and a rapid degradation of the substance.
Partition coefficient (n-octanol/water): log Pow 4.4
Bioconcentration: BCF 176

12.4. Mobility in soil
Product
No information is available for the product.

Amisulbrom active ingredient
Amisulbrom is considered not to leach into ground water.
Adsorption/desorption: Amisulbrom K$_{d}^{abs}$ : 8156-44231 (immobile class)

12.5. Results of PBT and vPvB assessment
Product
No information is available for the product, but it will be regarded to be neither PBT nor vPvB based on the data of the active ingredient.

Amisulbrom active ingredient
Based on the values of DT$_{50}$ in soil and BCF of the active ingredient, it is considered to be neither PBT nor vPvB.

12.6. Other adverse effects
Not available.
13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods
Do not contaminate water, foodstuffs, feed or seed by disposal.

PRODUCT DISPOSAL
Wastes resulting from the use of this product that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticide disposal or burned in incinerator in accordance with all applicable regulations.

CONTAINER DISPOSAL
Completely empty container by shaking and tapping sides and bottom to loosen clinging particles. Do not reuse container. Triple rinse container, then puncture and dispose of by incineration in accordance with all applicable regulations.

14. TRANSPORT INFORMATION

14.1. UN number
3082

14.2. UN proper shipping name
Environmentally hazardous substance, liquid, n.o.s. (amisulbrom)

14.3. Transport hazard class(es)
Class 9

14.4. Packing group
Packing Group III

14.5. Environmental hazards
Marine Pollutant Label: Marine Pollutant

14.6. Special precautions for user
No special precautions available.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
No bulk transportation intended.

14.8. Supplemental information

IMDG
UN no.: 3082
Class: 9
Packing group: III
EmS: F-A, S-F

IMDG (continued)
Hazard label: Miscellaneous (S)
Marine pollutant label: Marine pollutant
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (amisulbrom)

ICAO/IATA
UN no.: 3082
Class: 9
Packing group: III
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (amisulbrom)

ADR/RID
UN no.: 3082
Class: 9
Packing group: III
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (amisulbrom)
14. TRANSPORT INFORMATION (continued)

ADN/ADNR
UN no. : 3082
Class : 9
Packing group : III
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s. (amisulbrom)

15. REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
EU
The product is regulated under the EU Directive(s) or Regulation(s) on plant protection products since it is one
of plant protection products.

Further Information
WHO Classification : III (Slightly hazardous)
JAPAN
This product for use of pesticides is controlled under Agricultural Chemicals Regulation Law.
Not classified under Poisonous and Deleterious Substances Control Law

15.2. Chemical safety assessment
The chemical safety assessment has not been carried out for this product yet.

16. OTHER INFORMATION

16.1 Classification and procedure used to derive the classification for mixtures according to Regulation
(EC) No 1272/2008 [CLP]

<table>
<thead>
<tr>
<th>Classification according to Regulation (EC) No 1272/2008 [CLP]</th>
<th>Classification procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Acute. 1, H400</td>
<td>On basis of test data</td>
</tr>
<tr>
<td>Aquatic Chronic. 1, H410</td>
<td>On basis of acute data</td>
</tr>
</tbody>
</table>

16.2 Relevant R-phrase and/or H-statements (see Sec 2 and 3)

Hazard Statement:  H318 Causes serious eye damage.
                  H332 Harmful if inhaled.
                  H400 Very toxic to aquatic life.
                  H410 Very toxic to aquatic life with long lasting effects.
                  H412 Harmful to aquatic life with long lasting effects.

Precautionary Statement:  P273: Avoid release to the environment
                          P391: Collect spillage
                          P501: Dispose of contents/container in accordance with local regulation

Risk phrases:  R20 Harmful by inhalation.
              R41 Risk of serious damage to eyes.
              R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects
                        in the aquatic environment.
              R52/53 Harmful to aquatic organisms, may cause long-term adverse effects
                        in the aquatic environment.

This Material Safety Data Sheet is prepared in accordance with Commission Regulation (EU) No 453/2010 of
Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).
The information above is believed to be accurate and represents the best information currently available.
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information for their particular purposes.