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MATERIAL SAFETY DATA SHEET (MSDS)

SECTION 1. Product identifiers

Product name: Actidione, for tissue culture, 98%+ Product Code: A 1416 CAS No : 66-81-9 1.2. Relevant identified uses of the substance or mixture and uses advised against Use : Industrial. For professional use only.

1.3. Details of the supplier of the safety data sheet
Company identification
OTTO CHEMIE PVT LTD
101, Aarkay Ruby Industrial Estate(1B), Opp Shree Narayan Industrial Estate,
Chinchpada, Vasai East, Waliv, Maharashtra 401208.
Email <u>info@ottokemi.com</u>

1.4. Emergency telephone number Phone no. : + 91 22 2207 0099 (9:00am - 6:00 pm)

2.HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP] Germ cell mutagenicity (Category 2) Reproductive toxicity (Category 1B) Chronic aquatic toxicity (Category 2) Acute toxicity, Oral (Category 2) Classification according to EU Directives 67/548/EEC or 1999/45/EC Possible risk of irreversible effects. May cause harm to the unborn child. Very toxic if swallowed. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environmen. 2.2Label elements Labelling according Regulation (EC) No 1272/2008 [CLP] Pictogram Signal word Danger Hazard statement(s) H300 Fatal if swallowed. H341 Suspected of causing genetic defects. H411 Toxic to aquatic life with long lasting effects. H360D May damage the unborn child. Precautionary statement(s) P201 Obtain special instructions before use. P264 Wash hands thoroughly after handling. P273 Avoid release to the environment. P281 Use personal protective equipment as required. P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. P308 + P313 IF exposed or concerned: Get medical advice/ attention. Supplemental Hazard none Statements. According to European Directive 67/548/EEC as amended. Hazard symbol(s) R-phrase(s) R61 May cause harm to the unborn child. R28 Also very toxic if swallowed. R68 Possible risk of irreversible effects. R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. S-phrase(s) S53 Avoid exposure - obtain special instructions before use. S45 In case of accident or if you feel unwell, seek medical advice immediately

(show the label where possible).

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S61 Avoid release to the environment. Refer to special instructions/ Safety data sheets. Restricted to professional users. 2.3 Other hazards - none

3.COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances Synonyms: Actidione Naramycin A 3-[2-(3,5-Dimethyl-2-oxocyclohexyl)-2-hydroxyethyl]glutarimide Formula: C15H23NO4 Molecular Weight 281,35 g/mol Cycloheximide CAS-No. 66-81-9 EC-No. 200-636-0 Index-No. 613-140-00-8

4. FIRST AID MEASURES

4.1Description of first aid measures General advice Consult a physician. Show this safety data sheet to the doctor in attendance. If inhaled If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician. In case of skin contact Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician. In case of eye contact Flush eyes with water as a precaution. 8 If swallowed Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physicia 4.2 Most important symptoms and effects, both acute and delayed To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. 4.3 Indication of any immediate medical attention and special treatment needed no data available 5. FIREFIGHTING MEASURES

5.1 Extinguishing media Suitable extinguishing media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. 5.2 Special hazards arising fromthe substance or mixture Carbon oxides, nitrogen oxides (NOx) Carbon oxides, nitrogen oxides (NOx) 5.3 Advice for firefighters Wear self contained breathing apparatus for fire fighting if necessary. 5.4 Further information no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.
6.4 Reference to other sections
For disposal see section 13.

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7. HANDLINGAND STORAGE 7.1 Precautions for safe handling Precautions for safe handling Avoid contact with skin and eves. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. 7.2 Conditions for safe storage, including any incompatibilities Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature: 2 - 8 °C 7.3 Specific end uses no data available 8. EXPOSURE CONTROLS/PERSONAL PROTECTION 8.1 Control parameters Components with workplace control parameters 8.2 Exposure controls Appropriate engineering controls Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Personal protective equipment Eye/face protection Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). 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 of 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. Immersion protection Material: Nitrile rubber Minimum layer thickness: 0,11 mm Break through time: > 480 min Material tested:Dermatril? (Z677272, Size M) Splash protection Material: Nitrile rubber Minimum laver thickness: 0.11 mm Break through time: > 30 min Material tested:Dermatril? (Z677272, Size M) test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario. **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. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). 9.PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties a)Appearance Form: Colour: b)Odour c)Odour Threshold d)pH e)Melting point/freezing

Powder Beige No data available No data available No data available 110 °C

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point

f)Initial boiling point and boiling range g)Flash point h)Evaporation rate i)Flammability (solid, gas) j)Upper/lower flammability or explosive limits k)Vapour pressure I)Vapour density m) Relative density n)Water solubility o)Partition coefficient: n octanol/water p)Autoignition temperature q)Decomposition temperature r)Viscosity s)Explosive properties t)Oxidizing properties 9.2 Other safety information no data available

no data available no data available no data available no data available no data available

no data available no data available no data available no data available log Pow: 0,55 no data available no data available

no data available

no data available no data available no data available

10. STABILITYAND REACTIVITY

10.1 Reactivity no data available 10.2 Chemical stability no data available 10.3 Possibility of hazardous reactions no data available 10.4 Conditions to avoid no data available 10.5 Incompatible materials Bases, Strong oxidizing agents, Acid anhydrides, Acid chlorides 10.6 Hazardous decomposition products Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects Acute toxicity LD50 Oral - rat - 2 mg/kg Skin corrosion/irritation Skin - rabbit - Skin irritation - 24 h Serious eye damage/eye irritation no data available Respiratory or skin sensitization Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals. Germcell mutagenicity Laboratory experiments have shown mutagenic effects. In vitro tests showed mutagenic effects 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 May cause congenital malformation in the fetus. Presumed human reproductive toxicant Specific target organ toxicity - single exposure no data available

Specific target organ toxicity - repeated exposure

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no data available Aspiration hazar no data available Potential health effects Inhalation May be harmful if inhaled. Causes respiratory tract irritation. Ingestion May be fatal if swallowed. Skin May be harmful if absorbed through skin. Causes skin irritation. Signs and Symptoms of Exposure To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Additional Information RTECS: MA4375000ECOLOGICAL INFORMATION

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 Results of PBT and vPvB assessment no data available 12.6 Other adverse effects Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Contaminated packaging Dispose of as unused product.

14.TRANSPORT INFORMATION

14.1 UN number ADR/RID: 2811	IMDG: 2811	IATA: 2811
14.2 UN proper shipping name		
ADR/RID:TOXIC SOLID, ORGANIC, N.O.S. (Cycloheximide)		
IMDG:TOXIC SOLID, ORGANIC, N.O.S. (Cycloheximide)		
IATA:Toxic solid, organic, n.o.s. (Cycloheximide)		
14.3 Transport hazard class(es)		
ADR/RID: 6.1 I	MDG: 6.1	IATA: 6.1
14.4 Packaging group		
ADR/RID: I	IMDG: I	IATA: I
14.5 Environmental hazards ADR/RID: no	IMDG Marine pollutant: no	IATA: no

15.REGULATORY INFORMATION

15.1 This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006. Safety, health and environmental regulations/legislation specific for the substance or mixture no data available 15.2 Chemical Safety Assessment no data available

Section 16: Other Information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all

DISCLAIMER

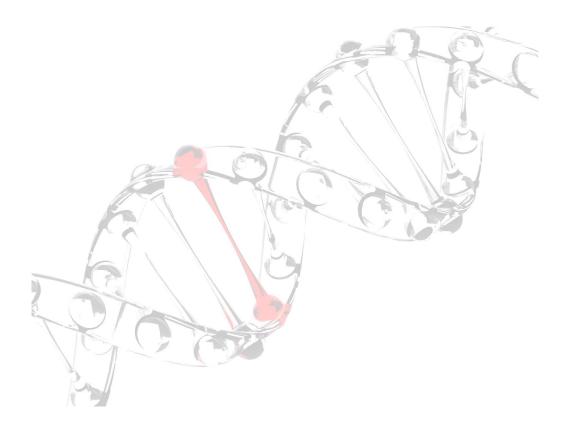
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precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.



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