



MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

Identification of the Substance:

Trade Name : WS-23
Chemical Name : N,2,3-TRIMETHYL-2-ISOPROPYLBUTANAMIDE
Use of the Substance : Flavor ingredient
Company Identification : Chemo Dynamics
3 Crossman Road South,
Sayreville, NJ 08872, USA
Phone : 732-721-4700
Fax : 732-721-6835
email : info@chemodynamics.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

CAS Number	FEMA Number	EINECS Number	Ingredient	Typical Weight %
51115-67-4	3804	256-974-4	N,2,3-TRIMETHYL-2-ISOPROPYLBUTANAMIDE (WS-23)	100.00

EU Classifications (refer to Section 16 for descriptions):

Symbol(s)	Risk Phrase Code(s)	Safety Phrase Code(s)
Xn	R20/22-36	S22-36/37/39

3. HAZARDS IDENTIFICATION

This substance is classified as dangerous according to EU Directive 1999/45/EC.

Potential Health Effects

Acute Health Effects:

Harmful if swallowed or inhaled. Irritating to eyes.

Chronic Health Effects:

Not Determined.

4. FIRST AID MEASURES

Inhalation:

Seek fresh air immediately. If breathing is difficult, seek medical advice.

Eye Contact:

Flush with water for at least 15 minutes. If irritation develops, get medical attention.



Skin Contact:

Remove contaminated clothing. Wash affected areas with plenty of soap and water. If irritation develops, seek medical advice.

Ingestion:

Drink lots of water to dilute substance. Get medical attention immediately or contact a poison control center for advice.

5. FIRE FIGHTING MEASURES

Suitable Fire Extinguishing Media:

Carbon dioxide, dry chemical, foam.

Unsuitable Fire Extinguishing Media:

If water must be used, use as a spray only.

Special Exposure Hazards:

Avoid heat, sparks and open flames.

Hazardous Decomposition Products:

Carbon dioxide, carbon monoxide, oxides of nitrogen, acrid fumes.

Special Protective Equipment for Fire Fighters:

Standard turnout gear for combustible liquids.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Standard turnout gear for combustible liquids.

Environmental Precautions:

Do not allow the substance or solutions of the substance to be discharged into lakes, streams, ponds or public waters.

Cleanup Procedures:

Scoop spills into closed containers for recovery or disposal.

7. HANDLING AND STORAGE

Handling:

Wear safety glasses or goggles, rubber gloves when handling. If ventilation is inadequate, wear a dust mask or air-fed visor.

Storage:

Do not store in close proximity to excessive heat, open flames, strong acids or strong bases. To minimize product degradation, avoid prolonged exposure of the substance to air. Keep container tightly closed when not in use.

Ventilation:

Not normally required. Local mechanical exhaust may be needed in confined and warm areas if the material is vaporized.

Safety Stations:

An eyewash station and a safety shower should be readily available and clearly marked.



8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:

None found.

Exposure Controls:

Respiratory Protection:

A respirator is not normally required. If vapor concentration is suspected to be high, use a NIOSH approved organic vapor respirator

Eye Protection:

Wear safety glasses or goggles.

Hand Protection:

Wear standard industrial type rubber gloves.

Skin Protection:

A rubber apron is recommended when handling the material for extended periods of time.

Personal Hygiene:

Wash hands and other exposed areas of skin with soap and water after handling the material.

Environmental Controls:

No environmental exposure controls required under Community environmental protection laws.

9. PHYSICAL AND CHEMICAL PROPERTIES

General Information:

Property	Result
Appearance:	White powder.
Odor:	Menthol-type.

Important Health, Safety and Environmental Information:

Property	Result
pH:	Not determined.
Boiling Point:	486F (252C) (Diff. Scanning Calorimeter)
Flash Point:	212F (100C) (Tag Closed Cup)
Melting Point:	144-147F (62-64C) (Diff. Scanning Calorimeter)
Flammability:	Not determined.
Explosive Properties:	Not an explosive.
Oxidizing Properties:	Not Determined.
Vapor Pressure:	0.004 mmHG @ 25 C

Solubility in Water (Weight%):	7.0 g/L @ 20 C
Solubility in Alcohol (Weight%):	Not Determined.
Fat Solubility:	Not Determined.
Partition Coefficient (n-Octanol/Water):	Log10Pow 2.23
Viscosity:	Not determined.
Vapor Density (air=1):	>1
Evaporation Rate (Butyl Acetate=1):	Not determined.
Autoignition Temperature:	Not Determined.
Specific Gravity:	Not Determined.



10. STABILITY AND REACTIVITY

Stability:

Substance is stable and unreactive under conditions of normal use.

Conditions to Avoid:

Prolonged or excessive heat and/or exposure to air may cause non-hazardous decomposition and/or oxidation of the substance.

Materials to Avoid:

Avoid contact with strong acids, strong bases, and materials that react with organic amines.

Hazardous Decomposition Products:

Carbon dioxide, carbon monoxide, oxides of nitrogen, acrid fumes.

11. TOXICOLOGICAL INFORMATION

Primary Target Organs: Eyes, Respiratory tract.

Primary Entry Route(s): Eyes, Inhalation.

Medical Conditions Aggravated by Overexposure : No known conditions.

Acute Toxicity:

Parameter	Result
Acute Oral Toxicity:	LD50 (rat): 500-1000 mg/kg.
Acute Inhalation Toxicity:	Not determined.
Acute Dermal Toxicity:	Not determined
Eye Irritancy:	Some evidence of conjunctivitis (rabbit eye).
Dermal Irritancy:	Not a skin irritant.
Skin Sensitization:	Not a skin sensitizer.
Mutagenicity:	Non-Mutagenic (AMES test).
Teratogenicity:	Not determined.

12. ECOLOGICAL INFORMATION

Ecotoxicity:	Not determined.
Mobility:	Not determined.
Persistence and Degradability:	Not determined.
Bioaccumulation Potential:	Not determined.
Ozone Depleting Substances:	None.

13. DISPOSAL CONSIDERATIONS

Disposal Methods:

This material, if discarded, is not considered a hazardous waste by EPA regulations 40 CFR 261.

Safe Handling of Wastes:

Refer to Section 8 for information pertaining to personal protective equipment and exposure controls when handling this material for disposal.



Community Provisions:

Dispose of this material at a local, state or federally approved landfill, incinerator or recovery facility.

14. TRANSPORT INFORMATION

DOT Non-Bulk Shipping Name : Chemicals n.o.i. (N,2,3-Trimethyl-2-Isopropylbutanamide)
DOT Bulk Shipping Name : Chemicals n.o.i. (N,2,3-Trimethyl-2-Isopropylbutanamide)
DOT Label(s) : None.
ADR/RID Classification : Not Regulated
IATA Classification : Not Regulated.
IMDG Classification : Not regulated

15. REGULATORY INFORMATION

Chemical Inventories Status:

USA (TSCA) : No, Exempt as per 40CFR 710.3.
European Community (EINECS) : Compliant
Canada (DSL) : Not Compliant
Australia (AICS) : Exempt
Japan (IEC) : Not determined
Korea (KECI/ECL) : Not Compliant
Philippines (PICCS) : Not determined
China (SEPA/CICS) : Compliant

USA: Federal:

SARA Title III Section 302/304 : None
SARA Title III Section 311/312 : Yes
SARA Title III Section 313 : None
Hazardous Air Pollutants : None

USA: States :

None.

International:

Not Determined.

16. OTHER INFORMATION

EU Classifications:

Symbol Code(s) :

Xn

Risk Phrase Codes:

R20/22-36

Symbol Phrase(s) :

HARMFUL

Risk Phrases:

Harmful by inhalation and if swallowed.
Irritating to eyes.



Safety Phrase Codes:

S22-36/37/39

Safety Phrases:

Do not breathe dust. Wear suitable protective clothing, gloves and eye/face protection.

U.S. NPCA/HMIS Hazardous Materials Information System

Health	Flammability	Reactivity	Personal Protection*
1	1	1	C

0 -Minimal Hazard: No significant risk to health.
1 -Slight Hazard: Irritation or minor reversible injury possible.
2 -Moderate Hazard: Temporary or minor injury may occur.
3 -Serious Hazard: Major injury likely unless prompt action is taken and medical treatment is given.
4 -Severe Hazard: Life-threatening, major or permanent damage may result from single or repeated exposures.
* This rating will generally suffice for normal operating conditions. Please note however, that the type of personal protection utilized may change based on specific use conditions (refer to Section 8).

Reason(s) for (Re)issue:

8-01-2005 Clarified TSCA Status from "Compliant" to "No, Exempt as per 40CFR 710.3."

Technical Contact(s):

Environmental and Regulatory Affairs Dept.

References:

INTERNAL STUDIES

Acronyms: NTP(National Toxicology Program); IARC (International Agency for Research on Cancer); OSHA (Occupational Health and Safety Administration); DOT (U.S. Dept. of Transportation)

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