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**MATERIAL SAFETY DATA SHEET**

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Issue Date

8-Dec-97

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**[1.CHEMICAL PRODUCT AND COMPANY IDENTIFICATION]**

PRODUCT NAME : ALDEHYDE C-12 MNA  
COMPANY : Kao Corporation  
2-1-3,Bunka Sumidaku,TOKYO,131-8501 JAPAN  
TELEPHONE NO. : 81-3-5630-7700(International Chemical Department)  
EMERGENCY TELEPHONE NO. : 81-3-5630-7700(International Chemical Department)

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**[2.COMPOSITION / INFORMATION ON INGREDIENTS]**

SUBSTANCE / MIXTURE : Substance  
CHEMICAL NAME : 2-Methyl Undecanal  
(GENERIC NAME)  
CHEMICAL FORMULA : C<sub>12</sub>H<sub>24</sub>O  
CAS RN : 110-41-8  
UN No. : Not applicable  
EINECS : 203-765-0  
TSCA : Yes  
OTHER INFORMATION : None

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**[3.HAZARDS IDENTIFICATION]**

FIRE AND EXPLOSION HAZARD : May be ignited by heat, sparks or flames.  
POTENTIAL HEALTH EFFECTS : This material is not harmful in case usual handling.  
ENVIRONMENTAL EFFECTS : No information available.

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**[4.FIRST-AID MEASURES]**

IN CASE OF EYE CONTACT : Immediately hold eyelids open and flush with a stream of water for at least 15 minutes. If necessary seek medical attention.  
IN CASE OF SKIN CONTACT : Wash material off the skin with plenty of water and soap. If necessary seek medical attention.  
IN CASE OF INHALATION : Remove person to fresh air. If necessary seek medical attention.  
IN CASE OF INGESTION : Seek medical attention. Never give anything by mouth to an unconscious person. If possible, rinse out mouth and give one or two glasses of water or milk to drink.

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**[5.FIRE-FIGHTING MEASURES]**

EXTINGUISHING MEASURES : Fight fire from upwind position.  
Move container from fire area if you can do it without risk.  
Keep unnecessary people away.  
Spray or scatter the extinguishing agents directly to the fire.  
EXTINGUISHING AGENTS : In case of small fire use powder, carbon dioxide or dry sand.  
In case of large fire shut off air by spraying with water or foam.

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**[6.ACCIDENTAL RELEASE MEASURES]**

Small spills : Absorb spills with sand or inert absorbent and flush with  
Large spills : Remove person to safety.  
Keep away from sources of ignition.  
Ensure adequate ventilation.  
Dike spills and dispose of in safe area.

Do not discharge into the drains, surface waters or ground

**[7.HANDLING AND STORAGE]**

HANDLING	: Keep away from sources of ignition. Do not smoke at work. Handle in well-ventilated areas. Use eye protection equipment as appropriate to situation. If absorbed in paper or cloth, incinerate to avoid spontaneous combustion.
STORAGE	: Keep container tightly closed. Store in a dark, cool and well-ventilated place.

**[8.EXPOSURE CONTROLS / PERSONAL PROTECTION]**

ACGIH(TLV)	: Not established
OSHA(PEL)	: Not established
VENTILATION	: Use local exhaust ventilation.
PROTECTIVE MEASURES	
RESPIRATORY PROTECTIVE EQUIPMENTS	: Use as appropriate to situation.
EYE PROTECTIVE EQUIPMENTS	: Safety goggles
HAND PROTECTIVE EQUIPMENTS	: Rubber gloves
PROTECTIVE CLOTHINGS	: Use as appropriate to situation.

**[9.PHYSICAL AND CHEMICAL PROPERTIES]**

APPEARANCE	: Clear liquid
ODOUR	: Characteristic odour
BOILING POINT	: 232.0 C , (449.6 F)
VAPOUR PRESSURE	: 0.006kPa ( 25.0 C) , 0.0mmHg ( 77.0 F)
VAPOUR DENSITY	: No data available
VOLATILITY	: No
MELTING / FREEZING POINT	: No data available
SPECIFIC GRAVITY	: 0.828 ( 20.0 C) , 0.828 ( 68.0 F)
SOLUBILITY	
WATER SOLUBILITY	: Insoluble
SOLVENT SOLUBILITY	: Soluble in ethyl alcohol
pH	: Not applicable
VISCOSITY	: No data available
OCTANOL / WATER PARTITION COEFFICIENT	: No data available
OTHER INFORMATION	: None

**[10.REACTIVITY AND STABILITY]**

FLASH POINT	: 113.0 C , (235.4 F) (Cleveland Open Cup Tester)
AUTOIGNITION TEMPERATURE	: No data available
EXPLOSIVE LIMIT IN AIR(LEC)	: No data available
EXPLOSIVE LIMIT IN AIR(UEC)	: No data available
COMBUSTIBILITY	: Yes
OXIDIZABILITY	: No
SELF-REACTIVITY / EXPLOSIVITY	: No information available

REACTIVITY AND STABILITY : Stable in general  
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS : carbon dioxide  
OTHER INFORMATION : None

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**[11.TOXICOLOGICAL INFORMATION]**

CORROSIVITY : No data available  
SKIN IRRITATION : No data available  
EYE IRRITATION : No data available  
SENSITIZATION : Human, Maximization test(4% in petrolatum) : Negative (2)  
ACUTE TOXICITY : Oral ,rat, LD<sub>50</sub> : > 5.0 g/kg (1)  
: Skin, rabbit, LD<sub>50</sub> : > 10.0 g/kg (1)  
SUBCHRONIC EFFECTS : No data available  
CHRONIC EFFECTS : No data available  
CARCINOGENICITY : No data available  
IARC : None of this product's components are listed  
NTP : None of this product's components are listed  
OSHA : None of this product's components are listed  
MUTAGENICITY : No data available  
REPRODUCTIVE EFFECTS : No data available  
TERATOGENICITY : No data available  
OTHER INFORMATION : None

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**[12.ECOLOGICAL INFORMATION]**

BIODEGRADABILITY : No data available  
BIOACCUMULATION : No data available  
FISH TOXICITY : No data available  
OTHER INFORMATION : None

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**[13.DISPOSAL CONSIDERATIONS]**

Review "HANDLING AND STORAGE(Section7)"  
Dispose of waste in accordance with local,state and federal regulations.

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**[14.TRANSPORTATION INFORMATION]**

Follow all regulations in your country or region.  
PRECAUTIONS : Review "ACCIDENTAL RELEASE MEASURES(Section6)"  
Review "HANDLING AND STORAGE(Section7)"  
PROPER SHIPPING NAME : Non hazardous  
HAZARD CLASS : Not applicable  
UN NO. : Not applicable  
PACKING GROUP : Not applicable  
HAZARD LABELS : Not applicable

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**[15.REGULATORY INFORMATION]**

Follow all regulations in your country or region.  
EINECS : 203-765-0  
TSCA : Yes

KAO Corporation is not able to check up the regulatory information in regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility.

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**[16.OTHER INFORMATION]**

REFERENCES : (1)Registry of Toxic Effects of Chemical Substances NIOSH(Online data)  
(2)Opdyke, D.L.J.,Monographs on Fragrance Raw Materials, Food and Chemical toxicology.

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