

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	: Substance
Trade name	: OTBCHA
CAS No	: 88-41-5
Product code	: O2000
Formula	: C12H22O2
Synonyms	: 1-acetoxy-2-tert-butylcyclohexane / 2-(1,1-dimethylethyl)cyclohexanol acetate / 2-tertiary-butylcyclohexanol acetate / 2-tert-butylcyclohexanol acetate / 2-tert-butylcyclohexyl acetate / cyclohexanol, 2-(1,1-dimethylethyl)-, acetate / grumex / Substances with a flash-point above 60 °C and not more than 100 °C / Substances with a flash-point above 60 °C and not more than 100 °C, which do not belong to another class

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

1.3. Details of the supplier of the safety data sheet

CHEMTEX USA
 27-29 Dwight Place
 Fairfield, 07004 - USA
 T 862-702-8900 - F 862-702-8180
contact@chemtexusa.com - www.chemtexusa.com

1.4. Emergency telephone number

Emergency number : CHEMTEL:(800)255-3924

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Flam. Liq. 4	H227
Skin Irrit. 2	H315
Eye Irrit. 2A	H319
STOT SE 3	H336
STOT SE 3	H335
Asp. Tox. 1	H304
Aquatic Chronic 2	H411

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H227 - Combustible liquid
 H304 - May be fatal if swallowed and enters airways
 H315 - Causes skin irritation
 H319 - Causes serious eye irritation
 H335 - May cause respiratory irritation
 H336 - May cause drowsiness or dizziness
 H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (GHS-US) :

P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking
 P261 - Avoid breathing dust, fume, gas, mist, spray, vapors
 P264 - Wash skin thoroughly after handling
 P271 - Use only outdoors or in a well-ventilated area
 P273 - Avoid release to the environment
 P280 - Wear eye protection, face protection, protective clothing, protective gloves
 P301+P310 - If swallowed: Immediately call a doctor, a POISON CENTER
 P302+P352 - If on skin: Wash with plenty of water

OTBCHA

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a doctor, a POISON CENTER if you feel unwell
P321 - Specific treatment (see supplemental first aid label on this label)
P331 - Do NOT induce vomiting
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash it before reuse
P370+P378 - In case of fire: Use carbon dioxide (CO₂), foam to extinguish
P391 - Collect spillage
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P403+P235 - Store in a well-ventilated place. Keep cool
P405 - Store locked up
P501 - Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Name	Product identifier	%	Classification (GHS-US)
OTBCHA (Main constituent)	(CAS No) 88-41-5	100	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H336 STOT SE 3, H335 Asp. Tox. 1, H304 Aquatic Chronic 2, H411

Full text of H-phrases: see section 16

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Remove the victim into fresh air. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
- First-aid measures after skin contact : Wash immediately with lots of water (15 minutes)/shower. Soap may be used. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention. Specific treatment (see ... on this label).
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Rinse immediately with plenty of water for 15 minutes. Take victim to an ophthalmologist. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion : Rinse mouth with water. Ingestion of large quantities: immediately to hospital. Call Poison Information Centre (www.big.be/antigif.htm). Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : ON CONTINUOUS EXPOSURE/CONTACT: Irritation of the respiratory tract. Irritation of the nasal mucous membranes. May cause respiratory irritation. May cause drowsiness or dizziness.
- Symptoms/injuries after skin contact : Tingling/irritation of the skin. Causes skin irritation.
- Symptoms/injuries after eye contact : Irritation of the eye tissue. Causes serious eye irritation.

OTBCHA

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Polyvalent foam. BC powder. Carbon dioxide. Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Solid water jet ineffective as extinguishing medium. Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : DIRECT FIRE HAZARD. Material presenting a fire hazard. INDIRECT FIRE HAZARD. Temperature above flashpoint: higher fire/explosion hazard. Combustible liquid.

Explosion hazard : DIRECT EXPLOSION HAZARD. No data available on direct explosion hazard. INDIRECT EXPLOSION HAZARD. No data available on indirect explosion hazard. May form flammable/explosive vapor-air mixture.

Reactivity : Upon combustion: CO and CO2 are formed.

5.3. Advice for firefighters

Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.

Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus. Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges. No naked lights. No smoking.

6.1.1. For non-emergency personnel

Protective equipment : Gloves. Protective clothing.

Emergency procedures : Mark the danger area. No naked flames. Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Avoid breathing dust/fume/gas/mist/vapors/spray.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Contain released substance, pump into suitable containers. Plug the leak, cut off the supply.

Methods for cleaning up : Take up liquid spill into inert absorbent material, e.g.: sand/earth. Scoop absorbed substance into closing containers. Clean contaminated surfaces with an excess of water. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapors are flammable. Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Precautions for safe handling : Comply with the legal requirements. Keep away from naked flames/heat. At temperature > flashpoint: use spark-/explosionproof appliances. Finely divided: spark- and explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Observe normal hygiene standards. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No naked lights. No smoking. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area.

OTBCHA

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Hygiene measures : Wash ... thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed.
Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep in fireproof place. Keep container tightly closed.
Incompatible products : Strong bases. strong acids.
Incompatible materials : Sources of ignition. Direct sunlight. Heat sources.
Heat-ignition : KEEP SUBSTANCE AWAY FROM: heat sources.
Prohibitions on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. (strong) bases.
Storage area : Store in a dry area. Ventilation at floor level. Keep only in the original container. Meet the legal requirements.
Special rules on packaging : SPECIAL REQUIREMENTS: hermetical. opaque. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials : MATERIAL TO AVOID: plastics.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

OTBCHA (88-41-5)	
ACGIH	Not applicable
OSHA	Not applicable

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.
Materials for protective clothing : GIVE EXCELLENT RESISTANCE: No data available. GIVE GOOD RESISTANCE: No data available. GIVE LESS RESISTANCE: No data available. GIVE POOR RESISTANCE: No data available.
Hand protection : Gloves. Wear protective gloves.
Eye protection : Safety glasses. Chemical goggles or safety glasses.
Skin and body protection : Protective clothing. Wear suitable protective clothing.
Respiratory protection : Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Wear respiratory protection.
Other information : When using, do not eat, drink or smoke.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Appearance : Liquid.
Color : Colourless
Odor : No data available on odour
Odor threshold : No data available
pH : No data available
Melting point : No data available
Freezing point : No data available
Boiling point : 112 °C (24 hPa)
Flash point : 89 °C
Relative evaporation rate (butyl acetate=1) : No data available
Flammability (solid, gas) : No data available
Explosion limits : No data available
Explosive properties : No data available
Oxidizing properties : No data available
Vapor pressure : < 1 hPa

OTBCHA

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Relative density	: 0.94
Relative vapor density at 20 °C	: 6.85
Molecular mass	: 198.34 g/mol
Solubility	: Insoluble in water. Soluble in ethanol.
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: 285 °C
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

Other properties : Gas/vapour heavier than air at 20°C. Slightly volatile.

SECTION 10: Stability and reactivity

10.1. Reactivity

Upon combustion: CO and CO₂ are formed.

10.2. Chemical stability

No data available. Combustible liquid. May form flammable/explosive vapor-air mixture.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame. Overheating. Heat. Sparks.

10.5. Incompatible materials

strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

OTBCHA (88-41-5)	
LD50 oral rat	4600 mg/kg (Rat)
LD50 dermal rabbit	> 5000 mg/kg (Rabbit)
ATE US (oral)	4600.000 mg/kg body weight

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: May cause drowsiness or dizziness. May cause respiratory irritation.
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: May be fatal if swallowed and enters airways.
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	: ON CONTINUOUS EXPOSURE/CONTACT: Irritation of the respiratory tract. Irritation of the nasal mucous membranes. May cause respiratory irritation. May cause drowsiness or dizziness.
Symptoms/injuries after skin contact	: Tingling/irritation of the skin. Causes skin irritation.

OTBCHA

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Symptoms/injuries after eye contact : Irritation of the eye tissue. Causes serious eye irritation.
Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Mild water pollutant (surface water). Ground water pollutant. No data available on ecotoxicity.
Toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability

OTBCHA (88-41-5)

Persistence and degradability	Biodegradability in water: no data available. May cause long-term adverse effects in the environment.
-------------------------------	---

12.3. Bioaccumulative potential

OTBCHA (88-41-5)

Bioaccumulative potential	No bioaccumulation data available. Not established.
---------------------------	---

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery. Use appropriate containment to avoid environmental contamination. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

Additional information : Hazardous waste according to Directive 2008/98/EC. Handle empty containers with care because residual vapors are flammable.

Ecology - waste materials : Avoid release to the environment. Hazardous waste due to toxicity.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN1993 Flammable liquids, n.o.s., 3, III

UN-No.(DOT) : UN1993

Proper Shipping Name (DOT) : Flammable liquids, n.o.s.

Transport hazard class(es) (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Hazard labels (DOT) : 3 - Flammable liquid



Packing group (DOT) : III - Minor Danger

Dangerous for the environment : Yes

OTBCHA

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Marine pollutant : Yes



DOT Packaging Non Bulk (49 CFR 173.xxx) : 203

DOT Packaging Bulk (49 CFR 173.xxx) : 242

DOT Symbols : G - Identifies PSN requiring a technical name

DOT Special Provisions (49 CFR 172.102) : B1 - If the material has a flash point at or above 38 C (100 F) and below 93 C (200 F), then the bulk packaging requirements of 173.241 of this subchapter are applicable. If the material has a flash point of less than 38 C (100 F), then the bulk packaging requirements of 173.242 of this subchapter are applicable.

B52 - Notwithstanding the provisions of 173.24b of this subchapter, non-reclosing pressure relief devices are authorized on DOT 57 portable tanks.

IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).

T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)

TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.

TP29 - A portable tank having a minimum test pressure of 1.5 bar (150.0 kPa) may be used provided the calculated test pressure is 1.5 bar or less based on the MAWP of the hazardous materials, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

DOT Packaging Exceptions (49 CFR 173.xxx) : 150

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 60 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

Additional information

Other information : No supplementary information available.

ADR

Transport document description : UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III, (E)

Packing group (ADR) : III

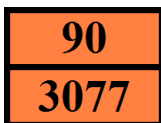
Class (ADR) : 9 - Miscellaneous dangerous substances and articles

Hazard identification number (Kemler No.) : 90

Classification code (ADR) : M7

Hazard labels (ADR) : 9 - Miscellaneous dangerous compounds



Orange plates : 

Tunnel restriction code (ADR) : E

Limited quantities (ADR) : 5kg

Excepted quantities (ADR) : E1

Transport by sea

UN-No. (IMDG) : 3077

OTBCHA

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Class (IMDG) : 9 - Miscellaneous dangerous compounds
Packing group (IMDG) : III - substances presenting low danger
MFAG-No : 171

Air transport

UN-No. (IATA) : 3077
Proper Shipping Name (IATA) : Environmentally hazardous substance, solid, n.o.s.
Class (IATA) : 9 - Miscellaneous Dangerous Goods
Packing group (IATA) : III - Minor Danger
Civil Aeronautics Law : Miscellaneous dangerous substances & articles

SECTION 15: Regulatory information

15.1. US Federal regulations

OTBCHA (88-41-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

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

Aquatic Chronic 2 H411

Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Xi; R36/38

Full text of R-phrases: see section 16

National regulations

No additional information available

15.3. US State regulations

No additional information available

SECTION 16: Other information

Other information : None.

Full text of H-phrases:

Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
Asp. Tox. 1	Aspiration hazard Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 4	Flammable liquids Category 4
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H227	Combustible liquid
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H411	Toxic to aquatic life with long lasting effects

SDS US (GHS HazCom 2012)

OTBCHA

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Disclaimer:

150 River Road, Suite G3B, Montville, NJ 07045. Ph. # (973) 335-2500; Fax # (973) 335-2552.

CHEMTEX USA, INC. Provides the information contained herein in a good faith but makes no representation as to its comprehensiveness or accuracy. Certain data contain in this document is taken from literature and or referred from other sources available in the web. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose and take the responsibility for observing existing laws and regulations.