

**WHAT EVERY CHEMICAL
TECHNOLOGIST WANTS
TO KNOW ABOUT . . .**

Volume IV

**CONDITIONERS, EMOLLIENTS
AND LUBRICANTS**

***WHAT EVERY CHEMICAL
TECHNOLOGIST WANTS TO
KNOW ABOUT...***

Volume IV

***CONDITIONERS, EMOLLIENTS
AND LUBRICANTS***

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PREFACE

This reference book is the fourth volume in the set of books entitled **WHAT EVERY CHEMICAL TECHNOLOGIST WANTS TO KNOW . . . SERIES**. This compendium serves a unique function for those involved in the chemical industry—it provides the necessary information for making the decision as to which trademark chemical product is most suitable for a particular application.

The chemicals included in this fourth book of the series have their major function as conditioners, emollients, and lubricants, however, complete cross-referencing is provided for the multiple functions of all the chemicals.

The first section which is the major portion of each volume contains the most common generic name of the chemicals as the main entry. All these generic entries are in alphabetical order. Synonyms for these chemicals are then listed. The CTFA name appears alongside the appropriate generic name. The structural and/or molecular formula of the chemical is listed whenever possible. The generic chemical is sold under various tradenames and these are listed here in alphabetical order for ease of reference along with their manufacturer in parentheses. The *Category* subheading lists all the possible functions that the chemical can serve. Because of differences in form, activity, etc., individual tradenames of the generic chemical are used in particular applications more frequently. These are delineated in the *Applications* section. The differences in properties, toxicity/handling, storage/handling, and standard packaging are specified in the subsequent sections wherever distinguishing characteristics are known.

The second section of the volume **TRADENAME PRODUCTS AND GENERIC EQUIVALENTS** helps the user who only knows a chemical by one tradename to locate its main entry in section 1. The user can look up this tradename in this section of the book and be referred to the appropriate, main-entry, generic chemical name.

The third section **GENERIC CHEMICAL SYNONYMS AND CROSS REFERENCES** provides a way of locating the main entries by knowing only one of the synonyms. If the generic chemical is not in the volume, it will refer you to the volume in which it is contained.

The fourth section **TRADENAME PRODUCT MANUFACTURERS** lists the full addresses of the companies that manufacture or distribute the tradename products found in the first section.

The following is a list of the six volumes that comprise this series:

Volume I	Emulsifiers and Wetting Agents
Volume II	Dispersants, Solvents and Solubilizers
Volume III	Plasticizers, Stabilizers and Thickeners
Volume IV	Conditioners, Emollients and Lubricants
Volume V	Resins
Volume VI	Polymers and Plastics

This series has been made possible through long hours of research and compilation and the dedication and tireless efforts of Roberta Dakan who helped make this distinctive series possible. Our appreciation is extended to all the chemical manufacturers and distributors who supplied the technical information.

M. and I. Ash

NOTE

The information contained in this series is accurate to the best of our knowledge; however, no liability will be assumed by the publisher for the correctness or comprehensiveness of such information. The determination of the suitability of any of the products for prospective use is the responsibility of the user. It is herewith recommended that those who plan to use any of the products referenced seek the manufacturer's instructions for the handling of that particular chemical.

OTHER BOOKS BY MICHAEL AND IRENE ASH

A Formulary of Paints and Other Coatings, Volumes I and II
A Formulary of Detergents and Other Cleaning Agents
A Formulary of Adhesives and Sealants
A Formulary of Cosmetic Preparations
The Thesaurus of Chemical Products, Volumes I and II
Encyclopedia of Industrial Chemical Additives, Volumes I-IV
Encyclopedia of Surfactants, Volumes I-IV
Encyclopedia of Plastics, Polymers and Resins, Volumes I-IV
What Every Chemical Technologist Wants to Know About. . .
 Volume I—Emulsifiers and Wetting Agents
 Volume II—Dispersants, Solvents and Solubilizers
 Volume III—Plasticizers, Stabilizers and Thickeners
Chemical Products Desk Reference

ABBREVIATIONS

@	at
anhyd.	anhydrous
APHA	American Public Health Association
approx.	approximately
aq.	aqueous
ASTM	American Society for Testing and Materials
avg.	average
B.P.	boiling point
Btu	British thermal unit
C	degrees Centigrade
CAS	Chemical Abstracts Service
cc	cubic centimeter(s)
CC	closed cup
cm	centimeter(s)
cm ³	cubic centimeter(s)
COC	Cleveland Open Cup
compd.	compound, compounded
conc.	concentrated, concentration
cP, cps	centipoise
cs, cSt	centistokes
CTFA	Cosmetic, Toiletry and Fragrance Association
DEA	diethanolamine
disp	dispersible, dispersion
dist	distilled
DOT	Department of Transportation
DW	distilled water
EO	ethylene oxide
equiv.	equivalent
F	degrees Fahrenheit
F.P.	freezing point
FDA	Food and Drug Administration
ft ³	cubic foot, cubic feet
g	gram(s)
gal	gallon(s)
HLB	hydrophile-lipophile balance
insol.	insoluble
IPA	isopropyl alcohol
kg	kilogram(s)
l, L	liter(s)
lb	pound(s)
M.P.	melting point
M.W.	molecular weight
max	maximum
MEA	monoethanolamine
MEK	methyl ethyl ketone
mfg.	manufacture
MIBK	methyl isobutyl ketone
min	minute(s)
min.	mineral, minimum
MIPA	monoisopropanolamine

misc.	miscible
ml	milliliter(s)
mm	millimeter(s)
NF	National Formulary
no.	number
o/w	oil-in-water
OC	open crucible
PEG	polyethylene glycol
pH	hydrogen-ion concentration
pkgs	packages
PMCC	Pensky Marten closed cup
POE	polyoxyethylene, polyoxyethylated
POP	polyoxypropylene
PPG	polypropylene glycol
pt.	point
R&B	Ring & Ball
RD	Recognized Disclosure
ref.	refractive
rpm	revolutions per minute
R.T.	room temperature
s	second(s)
sol.	soluble, solubility
sol'n.	solution
sp.gr.	specific gravity
SS	stainless steel
std.	standard
SUS	Saybolt Universal seconds
TCC	Taggart closed cup
TEA	triethanolamine
tech.	technical
temp.	temperature
theoret.	theoretical
TLV	threshold limit value
TOC	Taggart open cup
UL	Underwriter's Laboratory
USP	United States Pharmacopoeia
uv, UV	ultraviolet
veg	vegetable
visc.	viscosity, viscous
w/o	water-in-oil
wt	weight
≈	approximately equal to
<	less than
>	greater than
≤	less than or equal to
≥	greater than or equal to

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Acetylated lanolin (CTFA)

SYNONYMS:

Lanolin, acetates

CAS No.:

61788-48-5

TRADENAME EQUIVALENTS:

Acylan [Croda]

Lanacet 1705 [Henkel/Emery]

Ritacetyl [RITA]

CATEGORY:

Emollient, conditioner

APPLICATIONS:

Cosmetic industry preparations: (Ritacetyl); baby cosmetics (Acylan); hair preparations (Lanacet 1705); hypoallergenic cosmetics (Acylan); skin preparations (Lanacet 1705)

PROPERTIES:

Form:

Paste (Acylan)

Solid (Lanacet 1705; Ritacetyl)

Color:

Yellow (Acylan)

Composition:

100% active (Acylan; Lanacet 1705; Ritacetyl)

Ionic Nature:

Nonionic (Acylan; Lanacet 1705; Ritacetyl)

Acetylated lard glyceride (CTFA)

SYNONYMS:

Glycerides, lard mono-, acetates

CAS No.:

8029-92-3

TRADENAME EQUIVALENTS:

Grindtek AMOS 90 [Grindsted]

Tegin E 66 [Goldschmidt AG]

CATEGORY:

Lubricant, emollient, plasticizer, cosolvent, emulsifier

APPLICATIONS:

Cosmetic industry preparations: (Tegin E 66)

Food applications: food additives (Tegin E 66)

Industrial applications: (Tegin E 66); coatings (Grindtek AMOS 90); plastics (Grindtek AMOS 90)

Industrial cleaners: metal processing surfactants (Grindtek AMOS 90)

PROPERTIES:

Form:

Liquid (Grindtek AMOS 90; Tegin E 66)

Color:

Yellow (Grindtek AMOS 90)

Composition:

100% conc. (Tegin E 66)

Solubility:

Sol. in ethanol (Grindtek AMOS 90)

Sol. in paraffin oil (Grindtek AMOS 90)

Sol. in peanut oil (Grindtek AMOS 90)

Partly sol. warm in propylene glycol (Grindtek AMOS 90)

Sol. in white spirit (Grindtek AMOS 90)

Ionic Nature:

Nonionic (Tegin E 66)

HLB:

1.8 (Grindtek AMOS 90)

2-3 (Tegin E 66)

Acetyl monoethanolamide

SYNONYMS:

Acetamide MEA (CTFA)

Acetamide, N-(2-hydroxyethyl)-

N-Acetyl ethanolamine

N-(2-hydroxyethyl) acetamide

Acetyl monoethanolamide (cont'd.)

EMPIRICAL FORMULA:



STRUCTURE:



CAS No.:

142-26-7

TRADE NAME EQUIVALENTS:

Incromectant AMEA-70 [Croda]

Lipamide MEAA [Lipo]

Schercomid AME, AME-70 [Scher]

CATEGORY:

Conditioner, solvent, humectant, clarifying agent, intermediate, coupling agent, dispersant

APPLICATIONS:

Cosmetic industry preparations: (Incromectant AMEA-70); beauty masks (Lipamide MEAA); conditioners (Incromectant AMEA-70; Schercomid AME, AME-70); creams and lotions (Incromectant AMEA-70; Lipamide MEAA); hair preparations (Schercomid AME, AME-70); shampoos (Incromectant AMEA-70); skin preparations (Schercomid AME, AME-70); wave sets (Lipamide MEAA)

Industrial applications: pigments (Schercomid AME, AME-70)

Pharmaceutical applications: antiperspirant/deodorant (Lipamide MEAA); depilatories (Lipamide MEAA)

PROPERTIES:

Form:

Liquid (Incromectant AMEA-70)

Clear liquid (Schercomid AME, AME-70)

Color:

Gardner 2.0 max. (Schercomid AME, AME-70)

Odor:

Mild organoleptic (Schercomid AME, AME-70)

Composition:

70% active in water (Incromectant AMEA-70; Schercomid AME-70)

95% active min. (Schercomid AME)

Solubility:

Sol. in alcohols (Schercomid AME, AME-70)

Sol. in diols (Schercomid AME, AME-70)

Sol. in glycol ethers (Schercomid AME, AME-70)

Sol. in glycols (Schercomid AME, AME-70)

Sol. in ketones (Schercomid AME)

Sol. in polyols (Schercomid AME, AME-70)

Acetyl monoethanolamide (cont'd.)

Sol. in triols (Schercomid AME-70)

Sol. in water (Schercomid AME, AME-70)

Ionic Nature:

Nonionic (Schercomid AME, AME-70)

Sp.gr.:

1.07–1.17 (Incromectant AMEA-70)

1.1 ± 0.01 (Schercomid AME-70)

1.120 (Schercomid AME)

Density:

9.2 lb/gal (Schercomid AME-70)

9.3 lb/gal (Incromectant AMEA-70; Schercomid AME)

Flash Pt.:

> 180 C (OC) (Schercomid AME); (anhyd.) (Schercomid AME-70)

Acid No.:

10.0 max. (Schercomid AME, AME-70)

Alkali No.:

15.0 max. (Schercomid AME, AME-70)

Storage Stability:

1 yr min. shelf life in closed containers (Schercomid AME, AME-70)

Ref. Index:

1.4395 (Schercomid AME-70)

1.4700 (Schercomid AME)

pH:

6.0–8.5 (Incromectant AMEA-70; Schercomid AME-70); (50% aq. sol'n.) (Schercomid AME)

TOXICITY/HANDLING:

Conc. surface active agent—avoid prolonged contact with skin (Incromectant AMEA-70)

STORAGE/HANDLING:

Store in a cool, dry place (Incromectant AMEA-70)

STD. PKGS.:

55-gal (450 lb net) Blo-lined drums (Incromectant AMEA-70)

AMP isostearic hydrolyzed animal protein (CTFA)

SYNONYMS:

Isostearic hydrolyzed animal protein, aminomethyl propanol salt

CAS No.:

977010-74-4

AMP isostearic hydrolyzed animal protein (cont' d.)

TRADENAME EQUIVALENTS:

Crotein AD, AD Anhyd., ADX [Croda]

CATEGORY:

Conditioner, emulsifier, emollient

APPLICATIONS:

Cosmetic industry preparations: hair preparations (Crotein AD, AD Anhyd., ADX);
skin preparations (Crotein AD, AD Anhyd., ADX)

PROPERTIES:

Form:

Clear liquid (Crotein AD, AD Anhyd., ADX)

Color:

Yellow (Crotein AD, AD Anhyd., ADX)

Composition:

24–26% solids in ethanol/water (Crotein AD)

27–33% solids in ethanol (Crotein AD Anhyd.)

36–40% solids in ethanol (Crotein ADX)

Solubility:

Sol. in alcohols (Crotein AD, ADX)

Sol. in oil (Crotein AD)

Sp.gr.:

0.830–0.850 (Crotein AD Anhyd.)

0.855–0.870 (Crotein ADX)

0.885–0.900 (Crotein AD)

Acid No.:

29–39 (Crotein AD)

35–50 (Crotein AD Anhyd.)

55–70 (Crotein ADX)

pH:

8.0–9.0 (Crotein AD Anhyd.)

8.4–9.2 (Crotein AD, ADX)

Behenamidopropyl dimethylamine (CTFA)

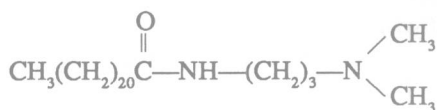
SYNONYMS:

Dimethylaminopropyl behenamide
N-[3-(Dimethylamino) propyl] docosanamide
Docosanamide, N-[3-(dimethylamino) propyl]-

EMPIRICAL FORMULA:

$C_{27}H_{56}N_2O$

STRUCTURE:



CAS No.:

RD No.: 977063-18-5

TRADENAME EQUIVALENTS:

Incromine BB [Croda]
Lexamine B-13 [Inolex]
Mackine 601 [McIntyre]
Schercodine B [Scher]

CATEGORY:

Conditioner, emulsifier, emollient, lubricant, moisturizer

APPLICATIONS:

Cosmetic industry preparations: conditioners (Lexamine B-13; Mackine 601); hair preparations (Incromine BB; Lexamine B-13; Mackine 601; Schercodine B); shampoos (Lexamine B-13); skin preparations (Incromine BB; Schercodine B)

PROPERTIES:

Form:

Solid (Mackine 601)
Flake (Incromine BB; Lexamine B-13)
Hard wax (Schercodine B)

Color:

Yellow (Incromine BB)
Tan (Schercodine B)

Composition:

98% amide min. (Schercodine B)
100% active (Incromine BB; Lexamine B-13; Mackine 601)

Ionic Nature:

Nonionic (Mackine 601)

Behenamidopropyl dimethylamine (cont'd.)

Cationic (Lexamine B-13; Schercodine B)

Nonionic/cationic (Incromine BB)

M.W.:

394 (Schercodine B)

420–450 (Incromine BB)

M.P.:

63–68 °C (Schercodine B)

70–72 °C (Incromine BB)

Acid No.:

5.0 max. (Incromine BB)

Alkali No.:

135–145 (Schercodine B)

TOXICITY/HANDLING:

Avoid prolonged contact with skin (Incromine BB)

STORAGE/HANDLING:

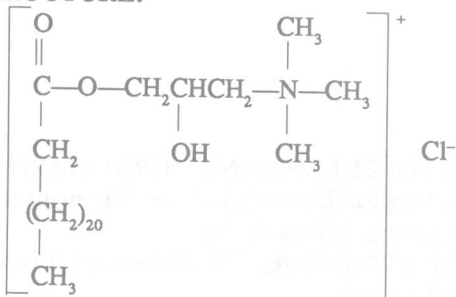
Store in a cool, dry place (Incromine BB)

Behenoyl-PG-trimonium chloride (CTFA)

SYNONYMS:

(3-Behenoyloxy-2-hydroxypropyl) trimethyl ammonium chloride

STRUCTURE:



CAS No.:

69537-38-8

TRADENAME EQUIVALENTS:

Akypoquat 131, 132 [Chem-Y GmbH]

CATEGORY:

Conditioner

APPLICATIONS:

Cosmetic industry preparations: hair preparations (Akypoquat 131, 132)