

INFORMATION SHEET

Fatty acids

(saturated , unsaturated , trans- and omega fatty acids)

Description

Fatty acids

Trans fatty acids

Trans fatty acids normally almost do not exist in nature. Only a very small percentage of the fat from ruminants exists out of trans fatty acids and these are essentially different from the ones made by the human body. The natural form is possibly connected to cancercombating properties as where the synthetic form probably only has harmful effects upon our health .

Unsaturated fatty acids

These fatty acids are roughly to be divided into two groups. The single and plural unsaturated fatty acids. The unsaturated fatty acids are further to be divided in omega-3- , 6- and 9-fatty acids.

Omega-3-fatty acids

It has been proven that the omega-3-fatty acids, long chained unsaturated fatty acids, are essential nutrients for both humans and rodents. This means that humans cannot make these substances themselves. In omega-3-fatty acids there is a double link after the third carbon atom after the methyl group.

Alpha-linolenic acid (ALA) is an omega-3-fatty acid. Sources for a-linolenic acid are green vegetables, nuts, flax seed, soy beans and walnut oil.

Longer omega-3-fatty acids can be synthesized by chloroplasts in plankton. Higher animals can not produce a double tie in the fatty acid chain. Through the food chain the omega-3-fatty acids are ending up in (namely fat) fish and shellfish.

Omega-6-fatty acids

The omega-6-fatty acids are not as strong unsaturated as the omega-3-fatty acids. The most welknown from this group is linoleic acid.

Omega-9-fatty acids

The most well-known omega-9-fatty acid is oleic acid. Olive oil contains lots of oleic acid. Omega-9-fatty acids have a *strong* cholesterol-lowering effect.

Method description

Method : ISO 15885/NEN6378/ISO 5508/ISO 5509

Round Robin test : NOFOTA and FOSFA

Scope of the method

Fatty acid	Name	Category
C-6 zuur	Caproic acid	Saturated fatty acid
C-8 zuur	Caprylic acid	Saturated fatty acid
C-10 zuur	Capric acid	Saturated fatty acid
C-11 zuur		Saturated fatty acid
C-12 zuur	Lauric acid	Saturated fatty acid
C-13 zuur	Tridecylic acid	Saturated fatty acid
C-14 zuur	Myristic acid	Saturated fatty acid
cis-9 C-14:1 zuur	Myristoleic acid	Omega-5-Fatty acid
C-15 zuur	Pentadecylic acid	Saturated fatty acid
cis-10 C-15:1 zuur		Unsaturated fatty acid
C-16 zuur	Palmitic acid	Saturated fatty acid
trans C-16:1 zuur	Palmitelaidic acid	Trans-fatty acid
cis C-16:1 zuur	Palmitoleic acid	Omega-7-Fatty acid
C-17 zuur	Margaric acid	Saturated fatty acid
cis-10 C-17:1 zuur		Unsaturated fatty acid
C-18 zuur	Stearic acid	Saturated fatty acid
trans-9 C-18:1 zuur	Elaidic acid	Trans-fatty acid
cis-9 C-18:1 zuur	Oleic acid	Omega-9-Fatty acid
all trans-9,12 C-18:2 zuur	Linoelaidic acid	Trans-fatty acid
all cis-9,12 C-18:2 zuur	Linoleic acid	Omega-6-Fatty acid
C-20 zuur	Arachidic acid	Saturated fatty acid
all cis C-18:3 zuur	γ -Linolenic acid	Omega-6-Fatty acid
C-18:4 zuur	Stearidonic acid	Omega-3-Fatty acid
cis-11 C-20:1 zuur	Gondoic acid	Omega-9-Fatty acid
all cis C-18:3 zuur	α -Linolenic acid	Omega-3-Fatty acid
C-21 zuur		Saturated fatty acid
all cis C-20:2 zuur	cis-11,14 eicosadienoic acid	Omega-6-Fatty acid
C-22 zuur	Behenic acid	Saturated fatty acid
all cis C-20:3 zuur	Homo- γ -linolenic acid	Omega-6-Fatty acid
cis C-22:1 zuur	Erucic acid	Omega-9-Fatty acid
all cis C-20:3 zuur	Eicosatrienoic acid (ETA)	Omega-3-Fatty acid
C-23 zuur		Saturated fatty acid
all cis C-20:4 zuur	Arachidonic acid	Omega-6-Fatty acid
all cis C-22:2 zuur	Docosadienoic acid	Omega-6-Fatty acid
C-24 zuur	Lignoceric acid	Saturated fatty acid
all cis C-20:5 zuur	Timnodonic acid (EPA)	Omega-3-Fatty acid
cis C-24:1 zuur	Nervonic acid	Omega-9-Fatty acid
all cis C-22:6 zuur	Docosahexaenoic acid (DHA)	Omega-3-Fatty acid
Detectionlimit :	0,1%	
Turn over times :	urgent	next working day
	normal	<5 working days (average <3 working days)
Minimal sample quantity:	100 g product or 250 g plant	